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## VOLUME CLXIV

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RICHARDSON, F. L., M.D.
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YOUNG, EDWARD L., M.D.
YOUNG, ERNEST BOYEN, M.D.
YOUNG, JAMES HERBERT, M.D.

# INDEX TO VOLUME CLXIV.

## AUTHORS.


**Adams, John D.** The functional spine, 80.
**Alexander, G.** On the possible effect upon the auditory labyrinth of the Ehrlich-Hata remedy in the treatment of syphilis, 331.
**Alger, Ellice M.** Disturbances dependent on eyestrain, 142.
**Amoss, Harold L., Rosenau, M. J., and Sheppard, A. G.** Anterior poliomyelitis; attempts to transmit the disease to monkeys by inoculation with the nasal, pharyngeal and buccal secretions of eighteen human cases, 743.
**Arkin, Louis.** A new tonsil-seizing forceps, 571.
**Arms, B. L.** The public health laboratory, 817.
**Austin, A. E.** Alimentary gastric hypersecretion and gastric atony, 77; on the dependence of intestinal indigestion on gastric disturbances, 327; the classification of diabetes mellitus, 807.
**Ayer, S. H.** Medical inspection of schools in Boston, Mass., 456.

**Bailey, Pearce.** The aims and possibilities of neurological hospitals, 215.
**Barnes, Harry A.** Hemorrhage after tonsillectomy, 119.
**Barney, J. Dellinger.** The care and management of the tabetic bladder, 111. Prognosis and treatment, 13.
**Barney, J. Dellinger, and Young, Edward L.** The value of the guinea-pig test in genito-urinary tuberculosis, 917.
**Beebe, Theodore Chapin.** Liquid air in surgery, 384.
**Binney, Horace.** Present status of intravesical operations for tumors of the bladder, 226.
**Bond, Earl D.** Common salt and fluid retention. A clinical example, 85.
**Bowditch, Henry.** Infectious diarrhea. Its treatment with especial reference to the biochemical and bacteriological standpoint, 294.
**Bowen, Judson T.** Report on dermatology, 922.
**Bradford, E. H., Watson, F. S., and Monks, George H.** Herbert Leslie Burrell, M.D. (1856–1910.) In memoriam, 105.
**Brown, Lloyd T.** Pregnancy as a possible relief for visceral ptosis, 819.
**Bryant, W. Sohier.** Reflexes and reflex neuroses from the upper air tract (including the nose and pharynx), 144.
**Bullard, William N.** Mongolian idiocy, 56.
**Burrage, W. L.** Progress in gynecology, 338.

**Cabot, Arthur Tracy.** School inspection in small towns, 633.
**Cabot, Hugh.** The difficulties and limitations of diagnosis in advanced cases of renal tuberculosis, 634.
**Cabot, Richard C.** The Towns-Lambert treatment for morphinism and alcoholism, 676; on the relation between laboratory work and clinical work, 880.
**Chute, Arthur L.** An infection of the bladder with penicillium glaucum, 420.
**Clark, Payson J., and Richardson, Oscar.** Case of foreign body in the trachea, status lymphaticus. Death. Autopsy, 115.
**Codman, E. A.** Complete rupture of the supraspinatus tendon. Operative treatment with report of two successful cases, 708.
**Coffin, Rockwell A.** A case of pemphigus chronicus vulgaris of the oral cavity and larynx, 612.
**Coolidge, A., Jr.** Lateral deviations of the external nose, 850.
**Coues, Wm. Pearce.** A review of 214 cases of extra-uterine pregnancy at the Massachusetts General Hospital, Boston, 677; note on a case of paralysis agitans and cerebral arteriosclerosis, 754; some problems of school inspection, 814.
**Courtney, J. W.** The youthful psychopath, 219.
**Cowles, William N.** A case of diabetes treated by feeding of calves' pancreas, 921.
**Crockett, Eugene A.** When shall we remove tonsils and what type of opsration shall we do? 414.

**Davis, Lincoln.** Some clinico-pathological data on bladder tumors, 222; an analysis of forty-six cases of prostatectomy, 519, 565, 609, 630.
**Dearborn, George V. N.** The neurology of apraxia, 783.
**De Normandie, Robert L.** Report on obstetrics, 155.
**Drury, Dana W.** Double otitis media. Dehiscence of the floor of the cavum tympani. Streptococcus meningitis, 308.
**Dunn, Charles Hunter, and Rotch, Thomas Morgan.** Report on pediatrics, 17.

**Eaton, C. A., and Watters, W. H.** Vaccines in puerperal sepsis, 524.
**Ehrenfried, Albert.** Intrathoracic insufflation anesthesia: apparatus and cases, 532.
**Emmons, Arthur Brewster, 2d, and Huntington, James Lincoln.** A review of the midwife situation, 251.

**Farnell, Frederic J.** A case of progressive muscular atrophy, Charcot-Marie-Tooth type, 714.
**Faunce, Calvin B., Jr.** Acute toxemia caused by infection of the throat by the colon bacillus, 613.
**Fay, William E.** Looking backward, 287.
**Felsa, Henry O.** Recent experimental work on the "fusion" of nerves and its practical bearing on infantile paralysis. Report of a case of infantile paralysis treated by this method, 667.
**Fisher, Edward D.** What is the meaning of reflex? 149.
**Fox, Howard.** The action of salvarsan upon the Wassermann reaction, 776.
**Freedman, L. M.** The extirpation of the tonsil by enucleation: partly instrumental, partly by the use of the finger, 535.
**Frothingham, Channing, Jr.** Present treatment of gastric and duodenal ulcer. A review of the recent literature on the subject, 489.

**Giffin, H. Z.** The examination of the nose and throat in relation to general diagnosis. Results in asthma following nasal operation, 228.
**Goldthwait, Joel E.** The lumbo-sacral articulation. An explanation of many cases of "lumbago," "sciatica" and paraplegia, 365.
**Goodrich, Annie W.** The nurse and the public health, 443.
**Graves, W. P.** Diverticulitis of the sigmoid, 372.
**Gray, Elizabeth T.** Short résumé of the history of Cæsarean section, 884.
**Green, Charles M.** Five successive Cæsarean sections on the same woman, the fifth on twins. A unique obstetric history, 642.
**Green, Robert M.** Men, manners and medicine, 593.
**Green, Robert M., and Swift, John B.** Hemorrhagic disease of the newborn, 454.
**Greene, D. Crosby, Jr.** Report of three recent cases of bronchoscopy for foreign bodies, 117.

**Hall, G. W.** The treatment of gastric hyperacidity with hydrogen peroxide, 846.
**Hallock, Frank K.** The sanatorium treatment of neurasthenia and the need of a colony-sanatorium for the nervous poor, 73.
**Hanson, W. C., and Linenthal, H.** Progress in hygiene and state medicine, 648.
**Harrison, Paul W.** The intravenous use of cocaine. Report of a case, 151.
**Hartshorne, Isaac.** Accurate optics, 786.
**Hill, Eben C.** A simple, quickly removable head bandage, 460.
**Hill, T. Chittenden.** The treatment of fistula in ano, 334.
**Hinsdale, Guy.** Climatic treatment of tuberculosis, 596.
**Hobart, Mary Forrester.** Indications for Cæsarean section, 885.
**Holmes, Edgar M.** A case of vertigo cured by treatment of the Eustachian tube, 848.
**Hood, James A.** "Common colds," 604; the early diagnosis of pulmonary tuberculosis from the standpoint of physical and fluoroscopic examinations, 779.
**Huntington, James Lincoln, and Emmons, Arthur Brewster, 2d.** A review of the midwife situation, 251.

**Jones, Harold W.** Report of a series of cases of syphilis treated by Ehrlich's arsenobenzol at the Walter Reed General Hospital, District of Columbia, 381.

**Keefe, John W.** Some of the more important diseases of the upper abdomen that may require surgical intervention, 53.
**Kendall, Arthur I.** Bacillary dysentery. Its bacteriology, biochemistry and their relation to treatment, 288.
**Kendall, Arthur I., and Smith, Richard M.** Diarrhea in infants associated with the gas bacillus in the stools, 306.
**Kendall, Arthur I., and Walker, Arthur W.** The associated flora of bacillary dysentery, 301.
**Kerr, Isabelle D.** Plaster casting from life to show external deformities of the nose before and after correction, 831.
**Knapp, Philip Coombs.** The new neurological service at the Boston City Hospital; its first year's work, 218; the alleged increase of nervous diseases, 419; a case of hemiatrophy from scleroderma, 671.

**Ladd, W. E.** Treatment of intussusception in children, 712.
**Lane, John W.** Report of a case of full-term intra-abdominal pregnancy, 683.
**Lawrence, Charles H., Jr.** A method of collecting urine from female infants, 309.
**LeConte, Robert G.** Acute inflammation of long bones, with special reference to excision of the diaphysis, 771.
**Lee, Edward Wallace.** Acute dilatation of the stomach following surgical operations, 562.
**Leszynsky, William M.** Reflex symptoms and disease of the nervous system, 150.
**Linenthal, H., and Hanson, W. C.** Progress in hygiene and state medicine, 648.
**Lothrop, Oliver A.** A new tonsil knife, 153.
**Lovett, Robert W., and Sheppard, Philip A. E.** The occurrence of infantile paralysis in Massachusetts in 1910, 737.

**Mason, Nathaniel R.** Report of a case of the administration of one eighth of a grain of morphine to a baby two and one-half days old. Recovery, 190; the end results of Cæsarean section, 889.
**Mayo, William J.** Some observations on the disorders of the stomach and duodenum with especial reference to ulcers, 477.
**McCarthy, Francis P.** A review of sanitation in Panama, 49.
**McKeen, Sylvester F.** Sudden death following a prophylactic dose of diphtheria antitoxin. Autopsy reveals status lymphaticus, 503.
**Merrill, Wm. H.** A case of nerve deafness due to the toxemia of diabetes, 849.
**Monks, George H.** Some practical points in connection with dislocation of the hip, and its reduction by the method of Bigelow, 262.
**Monks, Geo. H., Bradford, E. H., and Watson, F. S.** Herbert Leslie Burrell, M.D. (1856–1910.) In memoriam, 105.
**Morris, Robert T.** Reflexes in surgical diagnosis, 141; acute postoperative dilatation of the stomach, 564.
**Morse, John Lovett.** Acute poliomyeloencephalitis (infantile paralysis), 41; address of the president before the New England pediatric Society, 414; meningitis in infancy, 701.
**Morse, John Lovett, and Talbot, F. B.** Report on pediatrics, 852.
**Murphy, Fred T.** Antiperistalsis in the intestine. A clinical observation, 154.

**Neff, Irwin H.** Institutional forms of manic-depressive insanity, 81; some of the medical problems of alcoholism, 112.

**Pate, John Randolph.** Reflex disturbances referable to the ear, 147.
**Pattrey, Francis W.** Progress in the theory and practice of medicine. New methods of demonstrating tubercle bacilli, 614.
**Paul, W. E.** The treatment of acute poliomyelitis, 46.
**Perkins, Jay.** The fresh-air school, 10.
**Perry, Arthur P.** Keratosis follicularis, 191.

**Quinby, William C.** A note on the symptomatology of abscess of the liver, 267.

**Reik, H. O.** Secondary efforts to hasten healing after mastoidectomy, 417.
**Reynolds, Edward.** Two cases of abdominal pregnancy, one at term, 681.
**Rhea, Lawrence J., and Young, Ernest Boyen.** Ovarian pregnancy. Report of a case, 264.
**Richardson, F. L.** Tendon suture, 752.
**Richardson, Mark Wyman, and Spooner, Lesley H.** Antityphoid inoculation as introduced into certain training schools for nurses in Massachusetts, 8.
**Richardson, Maurice H.** Remarks on a forbidding case of cancer permanently cured by radical excision, 920.
**Richardson, Oscar, and Clark, J. Payson.** Case of foreign body in the trachea. Status lymphaticus. Death. Autopsy, 115.
**Rogers, Mark H.** Prognosis and treatment of tuberculosis of the ankle in adults, 811.
**Rosenau, M. J., Sheppard, Philip A. E., and Amoss, Harold L.** Anterior poliomyelitis. Attempts to transmit the disease to monkeys by inoculation with the nasal, pharyngeal and buccal secretions of eighteen human cases, 743.
**Rotch, Thomas Morgan and Dunn, Charles Hunter.** Report on pediatrics, 17.
**Rushmore, Stephen.** Late Cæsarean section. Report of a case, 537.
**Russell, F. F.** The prevention and treatment of typhoid fever with antityphoid vaccine, 1.

**Scudder, Charles L.** The transperitoneal and suprapubic approach to tumors of the bladder, 224.
**Sever, James Warren.** Overgrowth of the epiphysis of the lower end of the femur with an obliteration of the epiphyseal line, 186; an experimental study of tendon regeneration, 748.
**Shattuck, F. C.** Hexamethylamine as a possible preventive of pneumococcus empyema, 842.
**Sheppard, Philip A. E., and Lovett, Robert W.** The occurrence of infantile paralysis in Massachusetts in 1910, 737.
**Sheppard, Philip A. E., Rosenau, M. J., and Amoss, Harold L.** Anterior poliomyelitis. Attempts to transmit the disease to monkeys by inoculation with the nasal, pharyngeal and buccal secretions of eighteen human cases, 743.
**Smith, G. G.** The surgical treatment of gonorrheal epididymitis, 151.
**Smith, Mary A.** Technic of the operation, 886.
**Smith, Richard M.** Silver nitrate irrigations in the treatment of infectious diarrhea in infants, 298.
**Smith, Richard M., and Kendall, Arthur I.** Diarrhea in infants associated with the gas bacillus in the stools, 306.
**Soutter, Robert.** Scoliosis with marked structural change and rotation, 557.
**Spooner, Lesley H., and Richardson, Mark Wyman.** Antityphoid inoculation as introduced into certain training schools for nurses in Massachusetts, 8.
**Stedman, Henry R.** Popular fallacies about insanity, 405.
**Sutton, Richard L.** Sporotrichosis in man and in the horse, 179; salvarsan ("606") in the treatment of chronic pemphigus, 336.
**Squier, J. Bentley.** Suprapubic intra-urethral enucleation of the prostrate, 911.

**Talbot, Fritz B.** Two methods of obtaining human milk for hospital use, 304.
**Talbot, Fritz B., and Morse, John Lovett.** Report on pediatrics, 852.
**Tenney, Benjamin.** The time and method for prostatectomy, 109.
**Towle, Harvey, P.** Progress in dermatology, 538, 571.
**Tuttle, James P.** Fibrous stricture of the rectum, 445.
**Tyrode, Maurice Vejux.** Indications from a medical standpoint for operative procedures in the presence of chronic gastric symptoms, 495; progress in pharmacology and experimental medicine, 684.

**Vietor, Agnes C.** The special relation of modern medicine to the health of women, 181.
**Vincent, Beth.** A case of intussusception, 309.

**Walker, Arthur W., and Kendall, Arthur L.** The associated flora of bacillary dysentery, 301.
**Walker, I. Chandler.** Tuberculous meningitis, with leucocytosis and a purulent exudation containing many bacilli. A case report, 816.
**Watson, F. S., Bradford, E. H., and Monks, George H.** Herbert Leslie Burrell, M.D. (1856–1910.) In memoriam, 105.
**Watters, W. H., and Eaton, C. A.** Vaccines in puerperal sepsis, 524.
**Wells, Orion V.** Hemorrhagic disease of the newborn; report of two cases in one family, 716.
**White, Charles J.** A summer service in the Weld Ward of the Massachusetts General Hospital, 643.
**White, Franklin W.** Duodenal ulcer, 482; further experience with the benzidin test for occult blood in diseases of the digestive organs, 876.
**Williams, John T.** Breast abscess during pregnancy with report of a case, 188; the immediate results of Cæsarean section, 888.
**Williams, John T., and Young, Ernest Boyen.** The results of the treatment of two thousand cases of miscarriage at the Boston City Hospital, 871.
**Wilson, W. E.** The disappearance of a catheter in the bladder and its subsequent spontaneous passage, 267.
**Worcester, A.** Obstetrics in general practice, 837.

**Yawger, N. S.** "Fibrositis" as a cause of chronic hypertrophic spondylitis and possibly with a heretofore undescribed sign in intestinal auto-intoxication, 843.
**Young, Edward L., and Barney, J. Dellinger.** The value of the guinea-pig test in genito-urinary tuberculosis, 917.
**Young, Ernest Boyen, and Rhea, Lawrence J.** Ovarian pregnancy. Report of a case, 264.
**Young, Ernest Boyen, and Williams, John T.** The results of the treatment of two thousand cases of miscarriage at the Boston City Hospital, 871.
**Young, James Herbert.** An analysis of one hundred and seventy-eight cases of infectious diarrhea in infants, 299; intussusception in children, 710.

## SUBJECTS.

**Abdomen**, upper, some of the more important diseases of, that may require surgical intervention, John W. Keefe, M.D., 53.
**Abscess**, breast, during pregnancy, John T. Williams, M.D., 188; liver, a note on the symptomatology of, William C. Quimby, M.D., 267.
**Acute Dilatation** of the stomach following surgical operations, Edward Wallace Lee, M.D., 562; of the stomach, Robert T. Morris, M.D., 564.
**Acute Poliomyelitis**, the treatment of, W. E. Paul, M.D., 46.
**Acute Poliomyeloencephalitis** (infantile paralysis), John Lovett Morse, A.M., M.D., 41.
**Addresses.** Address of the president before the New England Pediatric Society, John Lovett Morse, A.M., M.D., 414; men, manners and medicine, Robert M. Green, M.D., 593; the nurse and the public health, Annie W. Goodrich, R.N., 443.
**Alcoholism**, some of the medical problems of, Irwin H. Neff, M.D., 112; the Towns-Lambert treatment for morphinism and, Richard C. Cabot, M.D., 676.
**Alimentary Gastric Hypersecretion** and gastric atony, A. E. Austin, M.D., 77.
**Anesthesia**, intrathoracic insufflation: apparatus and cases, Albert Ehrenfried, M.D., 532.
**Anterior Poliomyelitis.** Attempts to transmit the disease to monkeys by inoculation with the nasal, pharyngeal and buccal secretions of eighteen human cases, M. J. Rosenau, M.D., Philip A. E. Sheppard, M.D., and Harold L. Amoss, M.D., 743.
**Antiperistalsis in the Intestine.** A clinical observation, Fred T. Murphy, M.D., 154.
**Antityphoid Inoculation** as introduced into certain training schools for nurses in Massachusetts, Mark Wyman Richardson, M.D., and Lesley H. Spooner, M.D., 8.
**Antityphoid Vaccine**, the prevention and treatment of typhoid fever with, F. F. Russell, M.D., 1.
**Apraxia**, the neurology of, George V. N. Dearborn, M.D., 783.
**Arteriosclerosis**, cerebral, and paralysis agitans. Note on a case of, Wm. Pearce Coues, M.D., 754.
**Asthma**, results in, following nasal operation, H. Z. Giffin, M.D., 228.
**Atrophy**, a case of progressive muscular, Charcot-Marie-Tooth type, Frederic J. Farnell, M.D., 714.
**Auditory Labyrinth**, on the possible effect upon, of the Ehrlich-Hata remedy in the treatment of syphilis, Prof. G. Alexander, M.D., 331.

**Bacillary Dysentery.** See "Dysentery."
**Bandage**, head, Eben C. Hill, M.D., 460.
**Bladder**, an infection of the, with penicillium glaucum, Arthur L. Chute, M.D., 420; the disappearance of a catheterin in, W. E. Wilson, M.D., 267.
**Bladder Tumors**, present status of intravesical operations for, Horace Binney, M.D., 226; some clinico-pathological data on, Lincoln Davis, M.D., 222; the transperitoneal and suprapubic approach to, Charles C. Scudder, M.D., 224.
**Bones**, long, acute inflammation of, with special reference to excision of the diaphysis, Robert G. Le Conte, M.D., 771; the lumbo-sacral articulation. An explanation of many cases of "lumbago," "sciatica" and parapiegia, Joel E. Goldthwait, M.D., 365; overgrowth of the epiphysis of the lower end of the femur, James Warren Sever, M.D., 186; tuberculosis of the ankle in adults, prognosis and treatment of, Mark H. Rogers, M.D., 811.
**Book Reviews.** Ellice M. Alger, refraction and motility of the eye, 424; Mrs. Martha M. Allen, alcohol: a dangerous and unnecessary medicine, 125; annual report of the Surgeon-General of the Public Health and Marine-Hospital Service of the United States. For the fiscal year 1909, 463; Edwin Ash, mind and health, 199; James Moores Ball, Andreas Vesalius, the reformer of anatomy, 426; S. Wyllis Bandler, vaginal celiotomy, 426; W. Blair Bell, the principles of gynecology, 273; D. H. Bergey, the principles of hygiene, 425; Sherman G. Bonney, pulmonary tuberculosis and its complications, 793; Louie Croft Boyd, state registration for nurses, 896; J. Milne Bramwell, hypnotism and treatment by suggestion, 125; Albert H. Brundage, a manual of toxicology, 425; Henry A. Cables, golden rules of diagnosis and treatment of diseases, 426; William Francis Campbell, a textbook of surgical anatomy, 855; Ludovico Cecchini, sanitary statistics of the Italian navy for the years 1905–1906, 274; the proceedings of the Charaka Club, Volume III, 723; Committee on Nurses of the Manhattan Eye, Ear, Nose and Throat Hospital, nursing in diseases of the eye, ear, nose and throat, 26; Harry Sturgeon Crosers, diagnosis and treatment of diseases of women, 273; T. D. Crothers, inebriety, 426; Arthur R. Cushny, a textbook of pharmacology and therapeutics, or the action of drugs in health and disease, 165; George V. N. Dearborn, moto-sensory development, 856; Pierre Descompa, the coeliac axis, 688; Margaret Frances Donahoe, a manual of nursing, 166; Alvah H. H. Doty, prevention of infectious diseases, 856; Seneca Egbert, a manual of hygiene and sanitation, 856; P. Ehrlich and A. Lazarus, anemia. Part I, Vol. I, 688; epidemic poliomyelitis. Report of the collective investigation Committee on the New York epidemic of 1907, 92; Francis Ashley Faught, essentials of laboratory diagnosis, 758; Johann Fein, hints for the general practitioner in rhinology and laryngology, 426; W. Soltau Fenwick, dyspepsia. Its varieties and treatment, 758; A. Dingwall Fordyce, the hygiene of infancy and childhood and the underlying factors of disease, 166; J. M. Fortescue-Brickdale, a practical guide to the newer remedies, 823; W. E. Fothergill, manual of diseases of women, 856; Anna M. Galbraith, personal hygiene and physical training for women, 823; E. Baldwin Gleason, a manual of diseases of the nose, throat and ear, 723; David Allyn Gorton, the history of medicine, philosophical and critical, from its origin to the twentieth century, 856; Alfred Pearce Gould, the Bradshaw lecture on cancer, 463; C. E. Green, the cancer problem, 723; David Berry Hart, phases of evolution and heredity, 199; Henri Hartmann, gynécologie opératoire, 724; George Herschell, the non-surgical treatment of duodenal ulcer, 165; Philip Hanson Hiss and Hans Zinsser, a textbook of bacteriology, 166; Julius Hoffman, Ludwig Pöhlman, and John George Garson, remedial gymnastics for heart affections,—a translation of "Die Gymnastik der Herzleidenden," 823; Henry Jellett, a manual of midwifery, 165; Edwin L. Jordan, a textbook of general bacteriology, 165; A. O. J. Kelly, the practice of medicine, 62; LeGrand Kerr, the care and training of children, 723; A. F. A. King, a manual of obstetrics, 165; Arnold C. Klebs, tuberculosis, 652; Felix Lejars, urgent surgery. Vol. II, 300; H. Edwin Lewis, pneumonia, 62; H. W. Longyear, nephrocoloptosis, 275; A. Manquat, principles of therapeutics, 199; A. Marie, pellagra, 274; Francis H. A. Marshall, the physiology of reproduction, 723; W. H. Martindale and W. W. Westcott, extra pharmacopeia, 275; W. Harrison Martindale, organic analysis chart, 578; C. A. McBride, the modern treatment of alcoholism and drug narcotism, 346; Robert S. McCoombs, diseases of children for nurses, 463; Joseph McFarland, a textbook of pathology, 578; Joseph McFarland, a textbook upon the pathogenic bacteria, for students of medicine and physicians, 578; Joseph McFarland, biology, general and medical, 793; J. Ewing Mears, the problem of race betterment, 578; Rutherford Morison, an introduction to surgery, 823; John Lovett Morse, case histories in pediatrics, 545; James Gregory Mumford, the practice of surgery, 198; John H. Musser and A. O. J. Kelly, a handbook of practical treatment, Volumes I and II, 824; C. Muthu, pulmonary tuberculosis and sanatorium treatment, 824; Burt E. Nelson, introduction to the analysis of drugs and medicines, 688; Heinrich Neumann, otitic cerebellar abscess, 239; Isaac Ott, internal secretions from a physiological and therapeutic standpoint, 723; M. G. Overlock, the working people; their health and how to protect it, 239; Alida Frances Pattee, practical dietetics, with reference to diet in disease, 307; Archibald Stanley Percival, the prescribing of spectacles, 307; L. Bathe Rawling, landmarks and surface markings of the human body, 794; report of the (New South Wales) Government Bureau of Microbiology; Sydney, 166; report of the Commissioner of Education for the year ended June 30, 1910. Vol. I, 198; John W. Ritchie and Joseph S. Caldwell, primer of hygiene, 652; Albert Robin, common practical therapeutics, 724; E. A. Schäfer, the essentials of histology, descriptive and practical, for the use of students, 345; G. E. de Schweinitz, diseases of the eye, a handbook of ophthalmic practice, 274; state board examination questions and answers of forty-one states and two Canadian provinces, 92; A. A. Stevens, modern materia medica and therapeutics, 274; Julia C. Stimson, nurses' handbook of drugs and solutions, 617; Emily M. A. Stoney, bacteriology and surgical technic for nurses, 166; Sinclair Tousey, medical electricity and Röntgen rays, 345; Samuel E. Tracy, studies in invalid occupation, 345; transactions of the Fourth International Sanitary Conference of the American republics, 507; Henry Enos Tuley, obstetrical nursing for nurses and students, 314; Dawson Turner, radium, 723; Thomas D. Tuttle, principles of public health, 652; Victor G. Vecki, the prevention of sexual diseases, 617; Ralph Vincent, on acute intestinal toxemia in infants, 617; Albert J. Walton, fractures and separated epiphyses, 346; George Lincoln Walton, those nerves, 346; John E. Weeks, a treatise on diseases of the eye, 687; William Wellington, movable kidney, 92; Charles J. Whitby, makers of man, 687; Royal Whitman, a treatise on orthopedic surgery, 274; DeForest Willard, the surgery of childhood, 688; Philip Zenner, education in sexual physiology and hygiene, 652; Annual Report of the Surgeon General of the Public Health and Marine Hospital Service of the United States for the year 1910, 932; Emil G. Beck, Bismuth Paste in Chronic Suppurations, 932.
**Boston City Hospital**, the new neurological service at, its first year's work, Philip Coombs Knapp, A.M., M.D., 218.
**Breast Abscess** during pregnancy, with report of a case, John T. Williams, M.D., 188.
**Bronchoscopy for Foreign Bodies**, report of three recent cases of, D. Crosby Greene, Jr., M.D., 117.
**Burrell**, Herbert Leslie, M.D. (1856–1910.) In memoriam. Tributes from Drs. E. H. Bradford, F. S. Watson and George H. Monks, 105.

**Cæsarean Section**, the end results of, Nathaniel R. Mason, M.D., 889; short résumé of the history of, Elizabeth T. Gray, M.D., 884; the immediate results of, John T. Williams, M.D., 888; indications for, Mary Forrester Hobart, M.D., 885; five successive, on the same woman, the fifth on twins. A unique obstetric history, Charles M. Green, M.D., 642; late. Report of a case, Stephen Rushmore, M.D., 537; technic of the operation, Mary A. Smith, M.D., 886.
**Cancer**, remarks on a forbidding case of, permanently cured by radical excision, Maurice H. Richardson, M.D., 920.
**Chronic Gastric Symptoms**, indications from a medical standpoint for operative procedures in the presence of, Maurice Vejux Tyrode, M.D., 905.
**Clinical Work** and laboratory work, on the relation between, Richard C. Cabot, M.D., 880.
**Cocaine**, the intravenous use of. Report of a case, Paul W. Harrison, M.D., 151.
**Colony Sanatorium** for the nervous poor, Frank K. Hallock, M.D., 73.
**"Common Colds,"** James A. Honeij, M.D., 604.
**Correspondence.** Elevators at elevated and subway stations, Edward M. Buckingham, 177; sex and education, Richard C. Cabot, 104; lectures of former professors of theory and practice of physic at Harvard, Henry A. Christian, 178; "proposed homeopathic sanatoria for consumptives," Herbert C. Clapp, 325; an anecdote about Cheselden, Charles G. Cumston, 326; Charles II—a therapeutic nihilist, Charles G. Cumston, 177; bleeding "gratis," Charles G. Cumston, 593; use of the incubator in study of embryology, Charles G. Cumston, 806; organic arsenic preparations and "606," Spencer L. Dawes, 39; letter from the Philippines. Changes in medical officers. Taal volcano eruption. Annual meeting of the Medical Association. Polished rice and beriberi. Salvarsan in syphilis and yaws. Ultraviolet rays. Amebic dysentery. General health con-

ditions, "G." 591; a letter from Bermuda, George W. Gay, 492; the best route to see the wonders of the western slope, George W. Gay, 555; "a possible cure for cancer." A correction, Harvey R. Gaylord, 214; treatment of phthisis by antiseptic inhalation, John B. Hawes, 2d, 286; relative to climate in hay fever, F. W. Hornbrook, 404; Professor Fisher's report on national vitality, Lawrence Irwell, 556; the American Association in Los Angeles, Walter Lindley, 665; a centenarian, Charles E. Morse, 104; antiseptic inhalations in pulmonary tuberculosis, Beverley Robinson, 364; the medical profession must change its tactics, William J. Robinson, 71; Paris letter. The latest treatment for tuberculosis. Declining birth-rate in France, "S.," 176; Paris letter. A few notes on altitude climates, "S.," 362; Paris letter. Tincture of iodine as a surgical antiseptic, "S.," 630; the heredity of insanity, E. E. Southard, 72; application of iodine to tonsils, Edmund D. Spear, 700; the best route to see the wonders of the western slope, George S. Whiteside, 665; tincture of iodine as an antiseptic, Frank Thomas Woodbury, 735.

**Deafness**, a case of nerve, due to the toxemia of diabetes, Wm. H. Merrill, M.D., 849.

**Dermatology**, progress in, Harvey P. Towle, M.D., 538, 571; summer service in the Weld ward of the Massachusetts General Hospital, Charles J. White, M.D., 643; progress in, John T. Bowen, M.D., 922.

**Deviations**, lateral, of the external nose, A. Coolidge, Jr., M.D., 850.

**Diabetes**, a case of, treated by feeding of calves' pancreas, William N. Cowles, M.D., 921.

**Diabetes Mellitus**, the classification of, A. E. Austin, M.D., 807; nerve deafness due to, Wm. H. Merrill, M.D., 849.

**Diaphysis**, excision of, acute inflammation of long bones with especial reference to, Robert G. LeConte, M.D., 771.

**Diarrhea, infectious.** Its treatment with especial reference to the biochemical and bacteriological standpoint, Henry I. Bowditch, M.D., 724; silver nitrate irrigations in the treatment of, in infants, Richard M. Smith, M.D., 298; an analysis of one hundred and seventy-eight cases of, in infants, James Herbert Young, M.D., 299; in infants associated with the gas bacillus in the stools, Arthur I. Kendall, Ph.D., and Richard M. Smith, M.D., 306.

**Digestive Organs.** Further experience with the benzidin test for occult blood in diseases of the, Franklin W. White, M.D., 876.

**Diphtheria Antitoxin**, sudden death following a prophylactic dose of. Autopsy reveals status lymphaticus, Sylvester F. McKeen, M.D., 503.

**Dislocation of the Hip** and its reduction by the method of Bigelow. Some practical points in connection with, George H. Monks, M.D., 262.

**Diverticulitis** of the sigmoid, W. P. Graves, M.D., 372.

**Duodenal Ulcer**, Franklin W. White, M.D., 482; some observations on the disorders of the stomach and duodenum with especial reference to ulcers, William J. Mayo, M.D., 477; present treatment of gastric and. A review of the recent literature on the subject, Channing Frothingham, Jr., M.D., 480.

**Dysentery**, bacillary. Its bacteriology, biochemistry and their relation to treatment, Arthur I. Kendall, 388; the associated flora of, Arthur I. Kendall, M.D., and Arthur W. Walker, M.D., 301.

**Editorials.** Medical and human progress, 27; the case of antityphoid inoculation, 28; eugenics and divorce, 28; liability of municipalities for water pollution, 29; responsibility of physicians for vital statistics, 29; the vanishing birth-rate of civilization, 62; death-rates in Boston and elsewhere, 63; termination of the typhoid epidemic at Annapolis, 63; some large bequests in medical charity, 63; ideals in sex education, 93; the migration of hospitals, 94; proposed milk legislation in Massachusetts, 94; municipal hospital in Cambridge, 95; projected endowment for Harvard Dental school, 95; recent progress in syphilis, 126; college women as mothers, 127; decrease of smallpox as an index of enlightenment, 127; Sir Francis Galton, 128; Inaccuracy of vital statistics in the United States, 129; protection of infants and children, 167; life insurance and preventive medicine, 168; report and recommendations of the Massachusetts Milk Committee, 169; the future of human lactation, 169; isolation of diphtheria carriers in Chicago, 169; the dust nuisance in the street and the hygienic legislative measures to be taken in Massachusetts, 199; the prevention of blindness from ophthalmia neonatorum, 200; the resignation of Dr. Owen Copp, 201; centralization and decentralization of population, 202; the optometry bill again, 202; prosecutions under the Pure Food Law in Massachusetts, 203; factory and school hygiene, 240; proposed sanatoria for consumptives, 241; international congress on hygiene and demography, 242; preparation of antimeningitis serum, 242; large and small families, 242; the economic argument in preventive medicine, 275; the case of the midwife, 276; determination and numerical relation of sex, 276; the death-rate of London, 277; optometry, 277; noting the "imperceptible," 313; proposed homeopathic sanatoria for consumptives, 316; report of the Rhode Island Tuberculosis Commission, 316; a new bacteriologic museum, 317; potential longevity in man and other animals, 317; insanity in London, 318; report of the Commission on Factory Inspection, 347; philanthropy, medicine and the limitation of families, 349; the growth of American universities, 349; annual report of the Carnegie Foundation, 350; four recent hospital reports, 350; the work of the Floating Hospital, 351; report of the Massachusetts State Board of Health for 1909, 391; the status of antivivisection, 391; poliomyelitis in the United States in 1910, 392; Dr. Irving Fisher's report on national vitality, 393; ancient and modern food adulteration, 393; Dr. Johnson and the medical profession, 427; recommendations for the prevention of degeneracy, 427; smallpox and vaccination in the Philippines, 428; doctors and barbers, 429; an obstetric anomaly, 430; Garth, Dryden and "The Dispensary," 464; Bernard Shaw and the doctors, 464; legal status of the Blazek twins, 465; the question of dual personalities, 466; proposed subsidy for childbearing in Illinois, 467; oriental and occidental rates of increase in population, 467; limitation of the undesirable, 508; some proposed Illinois legislation, 508; the prevention of violent death from fire, 509; Asklepios and the goose, 510; a notable memorial meeting, 510; inspection of tenement house work-rooms, 546; Claude Martin and autolithotrity, 546; the diptank decision, 547; work of the Philippine Health Bureau, 547; efficiency of work on Monday, 548; restraint of the insane, 579; Thucydides and the Athenian epidemic of plague, 580; science and method, 580; International Congress on Hygiene and Demography, 581; distribution of spotted fever tick, 581; [illegible]neric physicians, 618; the New York Neurological Institute, 619; [illegible] Metropolitan Water and Sewerage Board, 620; Arthurian physi[illegible]s, 654; the moral of the three-legged chicken, 655; smallpox and vac[illegible]nation in Cuba, 656; the plague in Asia, 656; Dresden International Hygiene Exposition, 689; an uncrowned king, 689; a new pregnancy clinic, 690; compensation for industrial accidents, 690; report of Boston State Hospital, 690; increase of suicide in the United States, 691; the passing of a medical landmark, 724; nature and eugenics, 725; the annual meeting of The Massachusetts Medical Society, 726; expedition to study mountain sickness, 727; work of the Army Medical Corps in the eradication of smallpox, 727; the origin of the office of coroner, 759; Lucretius and the plague, 759; plot to assassinate prison officials, 760; the water-supply of Boston, 760; Harvard school for advanced instruction in medicine, 761; a hospital for private patients, 761; some modern aspects of English race migration, 794; the main gateway to the western world, 795; meeting for the Boston Infants' Hospital, 796; use of saccharine in foodstuffs, 797; restoration of the army canteen, 825; problems of the milk supply, 826; hours of work for nurses, 826; Pure Food Law covers the ingredients, not the virtue of contents, 827; Sir James Young Simpson, 857; some possibly fruitless modes of social endeavor, 858; sanitary conditions of Massachusetts foundries, 859; the new medical building of McGill University, 859; centennial of the Rhode Island Medical Society, 860; testimonial to Dr. Owen Copp, 860; annual meeting of The Massachusetts Medical Society, 897; the Wesson Maternity Hospital, 898; the celebration and sequelæ of patriotic holidays, 899; genius, eugenics, and degeneracy, 899; a British compliment to Boston, 900; proposed amendment of Pure Food and Drug Law, 933; care and prevention of blindness, 934; opening of the Floating Hospital season, 934; experimental measles in the monkey, 935.

**Empyema** pneumococcus, hexamethylamine as a possible preventive of, F. C. Shattuck, M.D., 842.

**Epiphysis**, overgrowth of, of the lower end of the femur with an obliteration of the epiphyseal line, James Warren Sever, M.D., 186.

**Eyestrain**, disturbances dependent on, Ellice M. Alger, M.D., 142.

**Examination** of the nose and throat in relation to general diagnosis. Results in asthma following nasal operation, H. Z. Giffin, M.D., 228.

**"Fibrositis"** as a cause of chronic hypertrophic spondylitis and possibly with a heretofore undescribed sign in intestinal auto-intoxication, N. S. Yarger, M.D., 843.

**Fibrous Strictures** of the rectum, James P. Tuttle, M.D., 445.

**Fistula in Ano**, the treatment of, T. Chittenden Hill, M.D., 334.

**Fluid Retention**, common salt and, Earl D. Bond, M.D., 85.

**Follicularis Keratosis**, Arthur P. Perry, M.D., 191.

**Gastric Disturbances**, the dependence of intestinal indigestion on, A. E. Austin, M.D., 327.

**Gastric Hyperacidity**, the treatment of, with hydrogen peroxide, G. W. Hall, M.D., 846.

**Gastric Hypersecretion and gastric ulcer**, A. E. Austin, M.D., 77.

**Gastric Symptoms**, chronic, Maurice Vejux Tyrode, M.D., 495.

**Genito-Urinary.** The disappearance of a catheter in the bladder and its subsequent spontaneous passage, W. E. Wilson, M.D., 267; the time and method for prostatectomy, Benjamin Tenney, M.D., 109; an analysis of forty-six cases of prostatectomy, Lincoln Davis, M.D., 519, 565, 609, 639; the difficulties and limitations of diagnosis in advanced cases of renal tuberculosis, Hugh Cabot, M.D., 634; suprapubic intra-urethral enucleation of the prostrate, J. Bentley Squier, M.D., 911; the value of the guinea-pig test in genito-urinary tuberculosis, J. Dellinger Barney, M.D., and Edward L. Young, M.D., 917.

**Guinea-Pig Test**, the value of, in genito-urinary tuberculosis, J. Dellinger Barney, M.D., and Edward L. Young, M.D., 917.

**Gonorrheal Epididymitis**, the surgical treatment of, G. G. Smith, M.D., 151.

**Gynecology**, report on, Walter L. Burrage, M.D., 338; the special relation of modern medicine to the health of women, Agnes C. Vietor, M.D., 181; ovarian pregnancy, report of a case, Ernest Boyen Young, M.D., and Lawrence J. Rhea, M.D., 264; report of a case of full-term intra-abdominal pregnancy, John W. Lane, M.D., 683; two cases of abdominal pregnancy, one at term, Edward Reynolds, M.D., 681; a review of 214 cases of extra-uterine pregnancy at the Massachusetts General Hospital, Wm. Pearce Coues, M.D., 677.

**Head Bandage**, Eben C. Hall, M.D., 360.

**Hemiatrophy from Scleroderma**, a case of, Philip Coombs Knapp, A.M., M.D., 671.

**Hemorrhagic** disease of the newborn, Robert M. Green, M.D., and John B. Swift, Jr., M.D., 454; report of two cases in one family, Orion T. Wells, M.D., 716.

**Hexamethylamina** as a possible preventive of pneumococcus empyema, F. C. Shattuck, M.D., 842.

**Hygiene** and state medicine, progress in, Wm. C. Hanson, M.D., and H. Linenthal, M.D., 648.

**Idiocy**, Mongolian, William N. Bullard, M.D., 56.

**Indigestion**, intestinal, on gastric disturbances, the dependence of, A. E. Austin, M.D., 327.

**Infantile Paralysis**, John Lovett Morse, A.M., M.D., 41; recent experimental work on the "fusion" of nerves and its practical bearing on, report of a case of infantile paralysis treated by this method, Henry O. Feiss, M.D., 667; the occurrence of, in Massachusetts in 1910. Reported for the Massachusetts State Board of Health, Robert W. Lovett, M.D., and Philip A. E. Sheppard, M.D., 737. See also Poliomyelitis.

**Inflammation**, acute, of long bones, with special reference to excision of the diaphysis, Robert G. LeConte, M.D., 771.

**Inoculation**, antityphoid, in certain training schools, Mark Wyman Richardson, M.D., and Lesley H. Spooner, M.D., 8; antityphoid, F. F. Russell, M.D., 1.

**Insanity**, popular fallacies about, Henry R. Stedman, M.D., 405; institutional forms of manic-depressive, Irwin H. Neff, M.D., 81.

**Institutional Forms** of manic-depressive insanity, Irwin H. Neff, M.D., 81.

**Instruments**, new. See New Instruments.

**Intestine**, antiperistalsis in, Fred T. Murphy, M.D., 134.

**Intestinal Disturbances** in infants: symposium, 287.

**Intestinal indigestion** ... gastric disturbances, the dependence of, A. E. Austin, M.D.

**Intrathoracic Insufflation Anesthesia**, Albert Ehrenfried, M.D., 532.

**Intussusception**, in children, James Herbert Young, M.D., 710, treatment of, W. E. Ladd, M.D., 712; a case of, Beth Vincent, M.D., 309.

**Keratosis Follicularis**, Arthur P. Perry, M.D., 191.

**Laboratory Work** and clinical work, on the relation between, Richard C. Cabot, M.D., 880.

**Laryngology.** Toxemia caused by infection of the throat by the colon bacillus, Calvin B. Faunce, Jr., M.D., 613; bronchoscopy for foreign bodies, D. Crosby Greene, Jr., M.D., 117; a case of pemphigus chronicus vulgaris of the oral cavity and larynx, Rockwell A. Coffin, M.D., 612; the examination of the nose and throat in relation to general diagnosis. Results in asthma following nasal operation, H. Z. Giffin, M.D., 228. See Tonsils.

**Liquid Air** in surgery, Theodore Chapin Beebe, M.D., 384.

**Liver**, a note on the symptomatology of abscess of, William C. Quinby, M.D., 267.

**Looking Backward**, William E. Fay, M.D., 287.

**Lumbo-Sacral** articulation. An explanation of many cases of "lumbago," "sciatica" and paraplegia, Joel E. Goldthwait, M.D., 365.

**Manic-Depressive Insanity**, institutional forms of, Irwin H. Neff, M.D. 81.

**Mastoidectomy**, secondary efforts to hasten healing after, H. O. Reik, M.D., 417.

**Medicine**, progress in the theory and practice of. New methods of demonstrating tubercle bacilli, Francis W. Palfrey, M.D., 614; modern, the special relation of, to the health of women, Agnes C. Vietor, M.D., 181.

**Medical Progress.** Report on gynecology, Walter L. Burrage, 338; report on obstetrics, Robert L. DeNormandie, 155; progress in hygiene and state medicine, Wm. C. Hanson and H. Linenthal, 648; progress in the theory and practice of medicine. New methods of demonstarting tubercle bacilli, Francis W. Palfrey, 614; report on pediatrics. Thomas Morgan Rotch and Charles Hunter Dunn, 17; progress in dermatology, Harvey P. Towle, 531; 571; progress in pharmacology and experimental therapeutics, Maurice Vejux Tyrode, 684; report on dermatology, John T. Bowen, 922.

**Men, Manners and Medicine**, Robert M. Green, M.D., 503.

**Meningitis in Infancy**, John Lovett Morse, A.M., M.D., 701; tuberculous, with leucocytosis and a purulent exudation containing many bacilli. A case report, I. Chandler Walker, M.D., 816.

**Midwife Situation**, a review of the, Arthur Brewster Emmons, 2d, M.D., and James Lincoln Huntington, M.D., 251.

**Milk**, human, two methods of obtaining, for hospital use, Fritz B. Talbot, M.D., 304.

**Miscarriage**, the results of the treatment of two thousand cases of, at the Boston City Hospital, Ernest Boyen Young, M.D., and John T. Williams, M.D., 871.

**Miscellany.** A discussion of leprosy, 38; Massachusetts Board of Registration in Medicine, 39; seizures of impure foods, 39; variations of annual precipitation in Boston, 39; medical inspection of factories, 70; Boylston Medical Society, 1811–1911, 71; medical policy of the Boston Milk and Baby Hygiene Association, 137; New York Academy of Medicine. Edward N. Gibbs memorial prize, 138; an auto-aseptic thermometer case, 139; medical matters in the Philippines, 139; leprosy, beri-beri, yaws and "606," 139; expenditures for conservation of health, 140; The Massachusetts Medical Society, 211; industrial treatment of the insane at the Gardner state colony, 213; centenarians in England, 213; treatment of phthisis by antiseptic inhalation, 213; progress of the plague in China, 250; instruction of hospital corps in the navy, 285; continuance of the plague in Asia, 285; Massachusetts tuberculosis conference, 325; Massachusetts Medical Society. Annual meeting, 1911. Preliminary announcement of the Committee of Arrangements, 361; a lay estimate of the doctor, 361; report of the committee of the American Neurological Association appointed to inquire into the occurrence of mental disease among persons employed by transportation companies, made to the association at the meeting in Washington, May, 1910, 401; education in "sex hygiene," 401; physicians as prison wardens, 402; medical inspection of schools in Minneapolis, 441; resolutions on the death of Dr. James H. Penny, 442; the Panama canal and tick-infected areas, 475; fatalities from plague in the Orient, 476; the cholera epidemic at Madeira, 517; distribution of Irish-born population, 517; work of the Rockefeller Hookworm Commission, 518; health inspection in factories, 555; diffusion of uniform public health methods, 590; American Physical Education Association, 590; interpretation of Pure Drug Law, 590; the Strassburg municipal dental clinic, 590; bubonic plague in the Orient, 591; in memory of John C. Munro, M.D., 591; effect of choline derivatives on blood-pressure, 591; unfortunate connotation of "606," 591; medicine as a "light business," 591; in memory of Henry P. Bowditch, M.D., 629; the use of condensed milk, 630; sanitary conditions in Panama, 663; resolutions against consolidation of Massachusetts registration boards, 663; the Marie Feodorovna Red Cross prizes, 664; International Sanitation Congress in Paris, 664; Oliver Cromwell's head, 664; eradication of plague in California, 664; eugenics: meeting of section of American Breeders' Association, 699; in memoriam: Dr. Percy D. Littlejohn, 700; optometry in other states, 735; the use of digipuratum in heart disease, 769; report of Massachusetts Commission for the Blind, 770; recent bequests in public medical charity, 805; antityphoid vaccination for beneficiaries of Public Health and Marine-Hospital Service, 805; Army Medical Corps examinations, 806; bequests to hospitals, 835; prevalence of smallpox in the United States, 836; interstate care of lepers, 836; a circular concerning acute epidemic poliomyelitis, 869; investigation of anterior poliomyelitis, 869; experimental measles in the monkey, 870; air sickness in aviation, 870; The Massachusetts Medical Society. Annual meeting of the council, 908; Harvard Summer School of Medicine series of lectures, 943; prevention of rabies in the United States, 943.

**Mongolian Idiocy**, William N. Bullard, M.D., 56.

**Morphine**, report of a case of the administration of one eighth of a grain of to a baby two and one-half days old. Recovery, Nathaniel R. Mason, M.D., 190.

**Morphinism**, the Towns-Lambert treatment for, Richard C. Cabot, M.D., 676.

**Nerve Deafness** due to the toxemia of diabetes, Wm. H. Merrill, M.D., 849.

**Nervous Diseases**, the alleged increase of, Philip Coombs Knapp, A.M., M.D., 419; the sanatorium treatment of neurasthenia and the need of a colony-sanatorium for the nervous poor, Frank K. Hallock, M.D., 73; neurological hospitals, the aims and possibilities of, Pearce Bailey, M.D., 215; neurological service, Boston City Hospital, Philip Coombs Knapp, A.M., M.D., 218; note on a case of paralysis agitans and cerebral arteriosclerosis, Wm. Pearce Coues, M.D., 754. See also Reflex Disturbances.

**New Instruments.** A new tonsil-seizing forceps, Louis Arkin, M.D., 571; a new tonsil knife, Oliver A. Lothrop, M.D., 153.

**Nose**, lateral deviations of, A. Coolidge, Jr., M.D., 850; plaster casting from life to show external deformities of, before and after correction, Isabelle D. Kerr, M.D., 851.

**Nurse and Public Health**, the, Annie W. Goodrich, R.N., 443.

**Obituaries.** Henry Clay Angell, M.D., 835; Charles O. Ballou, M.D., 136; Dr. Carl Beck, 869; James Bell, M.D., 580; Edward Strong Bogert, M.D., 285; Henry Pickering Bowditch, M.D., LL.D., Harv., 438; C. Cole Bradley, M.D., 38; Walter Remsen Brinckerhoff, M.D., 360; Frederick Coggeshall, M.D., 211; Edward Fitch Cushing, M.D., 588; James Crowley Donoghue, M.D., 324; Theodor Escherich, M.D., 474; John Flint, M.D., 103; F. A. Harris, M.D., 136; Edward Hitchcock, M.D., 284; Jakob Heinrich Van't Hoff, M.D., LL.D., 361; Charles E. Inches, M.D., 103; Edward G. Janeway, M.D., 249; Aloysius O. J. Kelly, M.D., 360; James Kerr, M.D., 911; Leonard P. Kinnicutt, Sc.D., 249; Herman Knapp, M.D., 698; Sigmund Lustgarten, M.D., 175; Jeffery Allen Marston, C.B., M.D., M.R.C.P., F.R.C.S., 662; Emma W. Mooers, M.D., 835; Henry Power, M.B., 284; Edward Shippen, M.D., U.S.N., 907; John Tatham Thompson, M.B., C.M., Edin., 805; John Quincy Adams McCollester, M.D., 943; Alexander Bruce, M.A., M.D., LL.D., F.R.C.P.E., 942; Edwin Peabody Gerry, M.D., 943; Charles Goddard Weld, M.D., 941.

**Obstetrics**, report on, Robert L. De Normandie, M.D., 155; in general practice, A. Worcester, A.M., M.D., 837; review of the midwife situation, Arthur Brewster Emmons, 2d, M.D., and James Lincoln Huntington, M.D., 251; the results of the treatment of two thousand cases of miscarriage at the Boston City Hospital, Ernest Boyen Young, M.D., and John T. Williams, M.D., 871; vaccines in puerperal sepsis, W. H. Watters, A.M., M.D., 524.

**Optics**, accurate, Isaac Hartshorne, M.D., 786.

**Otitis Media**, double. Dehiscence of the floor of the cavum tympani. Streptococcus meningitis, Dana W. Drury, M.D., 308.

**Otology.** Secondary efforts to hasten healing after mastoidectomy, H. O. Reik, M.D., 417.

**Ovarian Pregnancy**, report of a case, Ernest Boyen Young, M.D., and Lawrence J. Rhea, M.D., 264.

**Overgrowth** of the epiphysis of the lower end of the femur, James Warren Sever, M.D., 186.

**Paralysis Agitans and Cerebral Arteriosclerosis**, note on a case of, Wm. Pearce Coues, M.D., 754.

**Paralysis**, infantile. See Infantile Paralysis.

**Pediatrics**, reports on. Physiology and pathology of the digestion of the carbohydrates in infancy, John Lovett Morse, A.M., M.D., and Fritz B. Talbot, M.D., 853; report on, Thomas Morgan Rotch, M.D., and Charles Hunter Dunn, M.D., 17; report of a case of the administration of one eighth of a grain of morphine to a baby two and one-half days old. Recovery, Nathaniel R. Mason, M.D., 190; intussusception in children, James Herbert Young, M.D., 710; treatment of intussusception in children, W. E. Ladd, M.D., 712; a case of intussusception, Beth Vincent, M.D., 309; meningitis in infancy, John Lovett Morse, A.M., M.D., 701; urine, a method of collecting from female infants, Charles H. Lawrence, Jr., M.D., 309; hemorrhagic disease of the newborn, Robert M. Green, M.D., and John B. Swift, Jr., M.D., 454; hemorrhagic disease of the newborn; report of two cases in one family, Orion V. Wells, M.D., 716.

**Pemphigus Chronicus Vulgaris** of the oral cavity and larynx, a case of, Rockwell A. Coffin, M.D., 612.

**Pharmacology and Experimental Therapeutics**, progress in, Maurice Vejux Tyrode, M.D., 684.

**Plaster Casting** from life to show external deformities of the nose before and after correction, Isabelle D. Kerr, M.D., 851.

**Pneumococcus Empyema**, hexamethylenamine as a possible preventive of, F. C. Shattuck, M.D., 842.

**Poliomyelitis**, acute, treatment of, W. E. Paul, M.D., 46; attempts to transmit, to monkeys, M. J. Rosenau, M.D., P. A. E. Sheppard, M.D., and Harold L. Amoss, M.D., 743.

**Pregnancy**, report of a case of full-term intra-abdominal, John W. Lane, M.D., 683; as a possible relief for visceral ptosis, Lloyd T. Brown, M.D., 819; two cases of abdominal, one at term, Edward Reynolds, M.D., 681; a review of 214 cases of extra-uterine, at the Massachusetts General Hospital, Wm. Pearce Coues, M.D., 677; ovarian, report of a case, Ernest Boyen Young, M.D., and Lawrence J. Rhea, M.D., 264; breast abscess during, John T. Williams, M.D., 188.

**Prostate**, suprapubic intra-urethral enucleation of, J. Bentley Squier, M.D., 911.

**Prostatectomy**, the time and method for, Benjamin Tenney, M.D., 109; an analysis of forty-six cases of, Lincoln Davis, M.D., 519, 565, 609, 639.

**Psychopaths**, the youthful, J. W. Courtney, M.D., 219.

**Ptosis**, visceral, relieved by pregnancy, Lloyd T. Brown, M.D., 819.

**Public Health Laboratory**, B. L. Arms, M.D., 817.

**Puerperal Sepsis**, vaccines in, W. H. Watters, A.M., M.D., 524.

**Rectum**, fibrous stricture of, James P. Tuttle, M.D., 445; fistula in ano, treatment of, T. Chittenden Hill, 334.

**Reflex Disturbances.** Reflexes in surgical diagnosis, Robert T. Morris, M.D., 141; disturbances dependent on eyestrain, Ellice M. Alger, M.D., 142; reflexes and reflex neuroses from the upper air tract (including the nose and pharynx), W. Sohier Bryant, A.M., M.D., 144; reflex disturbances referable to the ear, John Randolph

Page, M.D., 147; what is the meaning of reflex? Edward D. Fisher, M.D., 149; reflex symptoms and disease of the nervous system, William M. Leszynsky, M.D., 150.

**Salt**, common, and fluid retention. A clinical example, Earl D. Bond, M.D., 85.

**Salvarsan**, the action of, upon the Wassermann reaction, Howard Fox, M.D., 776; possible effect upon the auditory labyrinth, Prof. G. Alexander, M.D., 331; in the treatment of chronic pemphigus, Richard L. Sutton, M.D., 336; treatment of syphilis by, Harvey P. Towle, 538, 571.

**Sanatorium** treatment of neurasthenia and the need of a colony-sanatorium for the nervous poor, Frank K. Hallock, M.D., 73.

**Sanitation**, a review of, in Panama, Francis P. McCarthy, M.D., 49; the public health laboratory, B. L. Arms, M.D., 817.

**Scleroderma**, a case of hemiatrophy from, Philip Coombs Knapp, A.M., M.D., 671.

**School Hygiene.** Some problems of school inspection, Wm. Pearce Coues, M.D., 814; school inspection in small towns, Arthur Tracy Cabot, A.M., M.D., 633; medical inspection of schools in Boston, Mass., S. H. Ayer, M.D., 456; the fresh-air school, Jay Perkins, M.D., 10.

**Scoliosis** with marked structural change and rotation, Robert Soutter, M.D., 557.

**Silver Nitrate** irrigations in infectious diarrhea in infants, Richard M. Smith, M.D., 298.

**"606."** See Salvarsan.

**Societies.** American Gastro-Enterological Association, 755, 789; American Laryngological Association, 22; American Medical Association, 386; American Public Health Association, 57, 89; American Urological Association. Fall meeting of the New England Branch, 231; Association of American Physicians, 891; Boston Medical Library in conjunction with the Suffolk District Medical Society. Meeting, Dec. 21, 1910, 460; Meeting, Jan. 18, 1911, 503; College of Physicians of Philadelphia, 575; Medical Society of the State of New York, 717; Mississippi Valley Medical Association, 86, 122, 160; National Confederation of State Medical Examining and Licensing Boards, 389; New England Otological and Laryngological Society, Meeting, Nov. 28, 1910, 121; Meeting, March 28, 1911, 855; New England Pediatric Society. Thirteenth meeting, Jan. 28, 1911, 423; Fourteenth meeting, Feb. 25, 821; North Central Section of the American Urological Association, 342; Philadelphia County Medical Society, 388; Southern Surgical and Gynecological Association, 268, 310; Western Surgical Association, 192, 236.

**Spine**, the functional, John D. Adams, M.D., 80.

**Sporotrichosis** in man and in the horse, Richard L. Sutton, M.D., 179

**State Medicine** and hygiene, progress in, Wm. C. Hanson, M.D., and H. Linenthal, M.D., 648.

**Stomach**, acute post-operative dilatation of, Robert T. Morris, M.D., 564; Edward Wallace Lee, M.D., 562.

**Streptococcus Meningitis**, double otitis media, Dana W. Drury, M.D., 308.

**Summer Service** in the Weld ward of the Massachusetts General Hospital, Charles J. White, M.D., 643.

**Supraspinatus Tendon**, complete rupture of, E. A. Codman, M.D., 708.

**Surgical Intervention**, some of the more important diseases of the upper abdomen that may require, John W. Keefe, M.D., 53.

**Symposium.** Studies in intestinal disturbances in infants, 287.

**Syphilis**, report of a series of cases of, treated by Ehrlich's arsenobenzol at the Walter Reed General Hospital, District of Columbia, Capt. Harold W. Jones, 381; treatment by salvarsan, Harvey P. Towle, M.D., 538, 571. See Salvarsan.

**Tabetic Bladder**, the care and management of the. III. Prognosis and treatment, J. Dellinger Barney, M.D., 13.

**Tendon**, complete rupture of the supraspinatus. Operative treatment with report of two successful cases, E. A. Codman, M.D., 708.

**Tendon Regeneration**, an experimental study of, James Warren Sever, M.D., 748.

**Tendon Suture**, F. L. Richardson, M.D., 752.

**Tonsillectomy**, hemorrhage after, Harry A. Barnes, M.D., 119.

**Tonsils.** When shall we remove, and what type of operation shall we do? Eugene A. Crockett, M.D., 414; the extirpation of, by enucleation: partly instrumental, partly by the use of the finger, L. M. Freedman, M.D., 535; a new forceps, Louis Aiken, M.D., 571; a new knife, Oliver A. Lothrop, M.D., 153.

**Towns-Lambert Treatment** for morphinism and alcoholism, the, Richard C. Cabot, M.D., 676.

**Toxemia**, acute, caused by infection of the throat by the colon bacillus, Calvin B. Faunce, Jr., M.D., 613.

**Toxicology**, report of a case of the administration of one eighth of a grain of morphine to a baby two and one-half days old. Recovery, Nathaniel R. Mason, M.D., 190.

**Trachea**, case of foreign body in the. Status lymphaticus. Death. Autopsy, J. Payson Clark, M.D., and Oscar Richardson, M.D., 115.

**Tubercle Bacilli**, new method of demonstrating, Francis W. Palfrey, M.D., 614.

**Tuberculosis**, renal, the difficulties and limitations of diagnosis in advanced cases of, Hugh Cabot, M.D., 634; climatic treatment of, Guy Hinsdale, M.D., E. O. Otis, M.D., and Vincent Y. Bowditch, M.D., 506; of the ankle in adults, prognosis and treatment of, Mark H. Rogers, M.D., 811; pulmonary, the early diagnosis of, from the standpoint of physical and fluoroscopic examinations, James A. Honeij, M.D., 779; the value of the guinea-pig test in genito-urinary, J. Dellinger Barney, M.D., and Edward L. Young, M.D., 917.

**Tumors**, bladder, Lincoln Davis, M.D., 222; the transperitoneal and suprapubic approach to, Charles L. Scudder, M.D., 224; present state of intravesical operations for, Horace Binney, M.D., 226.

**Ulcer**, duodenal, Franklin W. White, M.D., 482; some observations on the disorders of the stomach and duodenum with especial reference to, Wm. J. Mayo, M.D., 477; gastric and duodenal, present treatment, Channing Frothingham, M.D., 489.

**Upper Abdomen**, some of the more important diseases of the, that may require surgical intervention, John W. Keefe, M.D., 53.

**Urine**, a method of collecting from female infants, Charles H. Lawrence, Jr., M.D., 300.

**Vaccines** in puerperal sepsis, W. H. Watters, A.M., M.D., and C. A. Eaton, M.D., 524.

**Vertigo**, a case of, cured by treatment of the Eustachian tube, Edgar M. Holmes, M.D., 848.

**Wassermann Reaction**, the action of salvarsan upon, Howard Fox, M.D., 776.

**Weld Ward**, summer service in, of the Massachusetts General Hospital, Charles J. White, M.D., 643.

**Youth Psychopath**, J. W. Courtney, M.D., 219.

## Original Articles.

# THE PREVENTION AND TREATMENT OF TYPHOID FEVER WITH ANTITYPHOID VACCINE.*

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To the student of medicine not engaged in the treatment of individual cases of illness the great field of preventive medicine offers many attractive subjects, and in planning the prevention of disease nothing appeals to the sanitarian, or even the public at large, as does the conquest of typhoid fever.

We have some notable instances in other diseases, as in Malta fever, of the effect of preventive measures. This disease formerly necessitated the invaliding of many men of the English navy from the Mediterranean to home stations. The milk of goats having been proved through laboratory investigations to contain the *causus morbi*, the use of such milk was discontinued and the disease immediately ceased to exist in the navy. Malaria and yellow fever also promptly disappear following the application of proper prophylactic measures. In these three disorders the disease is shared in common by man and an alternative host; under such conditions, or whenever the responsibility for the survival of the disease be divided, the application of preventive measures is apt to be crowned with success. On the other hand, in diseases confined exclusively to human beings, as typhoid and pulmonary tuberculosis, the problem of prevention is much more difficult. Here the chronic carrier of the infection is a human being possessing almost equal rights with the healthy; he cannot be exterminated nor even confined to certain precincts, consequently more intricate and detailed measures must be found to prevent the passage of the infecting agent from the carrier to the well.

Typhoid spreads through such various channels that the problem of prevention has been attacked in as many ways, each of which may be suitable under given conditions. Epidemiological studies have shown a distinct difference between the course of typhoid in rural and urban populations. In cities the introduction of adequate sewerage systems, together with pure water and improved milk supplies, is usually followed by a reduction in the typhoid rate; where this can be done the disease ceases to be one of the greater problems. But in rural districts, on the other hand, there is little or no change from year to year in the methods used for the disposal of human wastes, the protection and purification of water supplies or in the control of infectious diseases; we find that year in and year out the typhoid rate remains high in rural communities.

In the military service we are confronted with both these conditions; our garrisoned posts correspond to cities, while maneuver and mobilization camps represent the country districts. The typhoid rate among troops in garrison has fallen year by year until it is now but about one half that of the civil population of military age. Were our troops always in garrison, the usual sanitary measures might afford adequate protection, but in camps, on marches and in actual warfare the conditions are radically changed. In the United States we have no permanent camp sites provided with sewer and water systems, each camp from a sanitary point of view being but a raw and crude rural community, liable to all the sanitary ills of such social units; worse even than the average village in some ways, since it is established in a hurry with no thought of permanency, on lines dictated by reasons of strategy rather than those of convenience or health. The entire population is housed under canvas; and tents being heavy and bulky, only the number necessity demands are carried on the wagon trains. This produces some overcrowding and a degree of personal contact between men which rarely exists in civil life outside of railroad and mining camps. The conditions are consequently most favorable for the introduction and spread of any infectious disease existing among the local population. Our water supplies being well protected, or the drinking water sterilized by boiling, very little typhoid in the service is water borne. The disease is introduced in other ways, sometimes, no doubt, by chronic bacillus carriers, but more often by incipient and mild cases among recruits or from contact with cases among the civil population already existing in the district. The studies of small epidemics made in the last few years point to the mild or walking case as the chief source of danger, and though in the service several thousand examinations have been made of the stools and urine of typhoid convalescents, no chronic bacillus carriers have been discovered. This is in practical agreement with the experiences of the Spanish War, when about one half the cases were diagnosed malaria; at the present time a provisional diagnosis of influenza is often made, but as no disinfection or isolation is instituted until typhoid is suspected, the interim provides opportunity for the infection to spread by contact. The cooks, assistants and mess hall attendants being detailed by roster from the entire company, sooner or later a mild case of typhoid has access to the food supply, and under such conditions experience teaches that many cases may occur. In the Spanish War we had no less than 20,738 cases with 1,580 deaths in an army of 107,973, or approximately 1 case to every 5 soldiers. The deaths from this cause constituted 86% of the total mortality of the war. In the Boer War the British had 31,000 cases with 5,877 deaths. In the Franco-Prussian War there having been 73,396 cases and 8,739 deaths among the Germans alone, typhoid is to be charged with 60% of the total mortality of that war. In the Northern Army during the Civil War we know of 80,000 cases. Such experiences would indicate that in campaign this disease is the greatest enemy with which we have to deal.

* Read at the meeting of the Boston Medical Library and the Suffolk District Medical Society, Dec. 7, 1910.

This being the condition confronting us, it is a serious question for us to decide which of the available prophylactic measures is the most suitable. The answer is, of course, self-evident, and while we cannot afford to neglect any measure, our chief dependence rests on immunizing each individual, and the very fact that the usual precautions against typhoid are impossible of execution enhances the value of vaccination.

Experience with vaccines in general and with typhoid vaccine in particular has shown the possibility of increasing the individual resistance to infection. As far back as 1886 Simmons and Frankel [1] immunized small animals with living cultures and Beumer and Piper [1] immunized mice. Chantemesse, Widal, Sanarelli [1] and others very early began investigations of typhoid prophylaxis by immunization. Little or nothing came of these experiments, largely because of the impracticability of using living bacteria on men. It was not until 1892 that Brieger, Kitasato and Wassermann [2] found that the use of living bacteria was unnecessary and that a high degree of immunity could be produced by killed cultures. In 1893 and 1894 Pfeiffer reported his investigations on the nature of the immunity in typhoid and cholera and elaborated a test for the presence of protective bodies in the serum which has become classic under the name of the Pfeiffer phenomenon. Soon after, in 1896, owing to the discovery of agglutinins by Grubler and Durham, our knowledge of typhoid immunity advanced rapidly. In the same year Pfeiffer and Kolle [3] immunized two men against typhoid and made complete and comprehensive studies of the blood changes following inoculation with killed cultures. Their work showed, according to present laboratory standards, the identity of the immunity produced by vaccination and by an attack of the fever, both agglutinins and bacteriolysins being greatly increased. A few weeks before Pfeiffer and Kolle's experiments became public, Sir A. E. Wright,[4] at that time connected with the English Army, inoculated two men with killed typhoid bacilli, but his studies were apparently on the coagulability of the blood since no report was made of the specific changes in the blood serum. In the next year, 1897, he launched the present antityphoid campaign in a publication describing the inoculation of 18 persons. In 1898 he vaccinated 4,000 men of the British Indian Army, and in 1900, on the outbreak of the Boer War, the vaccination was carried out on troops destined for South Africa. Wright furnished some 400,000 doses, and it is understood that 100,000 men were inoculated one or more times.

While the results were unquestionably good, the incidence of the disease being diminished approximately one half, and the mortality nearly two thirds, they were not as satisfactory as had been expected. The effects of the inoculations in some organizations of the English Army in South Africa were, however, quite unsatisfactory, in a few instances it even seeming to do harm by apparently increasing the susceptibility to infection. This view being accepted by Wright [5] and explained as a manifestation of a negative phase in the progress of immunization, it, together with some unfavorable reports, led to a cessation of the work toward the end of the war.

The next extensive use of the measure was in the German Colonial Army in South West Africa during the Herero campaign from 1904 to 1907.[6] The army, being composed of but 16,500 men, was greatly handicapped by the spread of typhoid among them. The matter was laid before Prof. R. Koch, who advised prophylactic vaccination, but as the measure was entirely voluntary, only about one half the command, 7,287, accepted it. The same degree of protection was obtained as in the Boer War. This closes the first period in the history of typhoid vaccination. The present period began in 1904 with the work of Sir William B. Leishman, of the Royal Army Medical Corps, who published such remarkably good results in the *Corps Journal* in 1907 that our attention was again drawn to the matter.[7] In the summer of 1908 the writer was permitted to visit the laboratory of Colonel Leishman and given every opportunity to study his methods and results. It having already become apparent that some of the poor results obtained in the early days, being due to avoidable causes, it was now possible to prepare a much more efficient vaccine. Colonel Leishman [8] has recently stated his belief that much of the vaccine of earlier days was inert because of overheating during its preparation and that with proper care it is possible to produce a uniformly good and potent vaccine.

In the fall of 1908 we fitted up a special laboratory at the Army Medical School in Washington for the preparation of vaccine on a large scale, and in February of 1909 began the vaccination of all applicants. At first volunteers were obtained with difficulty and it was only through the loyalty of the medical officers in town, who came bringing their wives, children and servants, that we succeeded in arousing interest. In this way about 150 persons were vaccinated, almost all of whom became active missionaries in the cause. By the end of 1909 we had given 5,106 doses to 1,987 persons; of these 77% received three doses, 17% two doses and only 6% failed to take more than one. During the present year, 1910, we have given up to Dec. 1, 1910, 39,000 doses to 14,286 persons, and although the vaccine has been administered by several hundred physicians located in many different places, no untoward results have been reported from the entire series.

The immediate effect of the vaccination is to produce both a local and general reaction. The local reaction is subject to much less variation than the general. The sensation arising from the injection is no more uncomfortable than from any other hypodermic injection as the suspension is made in normal salt solution and the quantity is quite small. The site of inoculation is the upper arm at the insertion of the deltoid, and after four to five hours it becomes red, swollen and tender. The area involved is often as large as the palm of the hand; occasionally the axillary glands are enlarged and tender on the day following. After

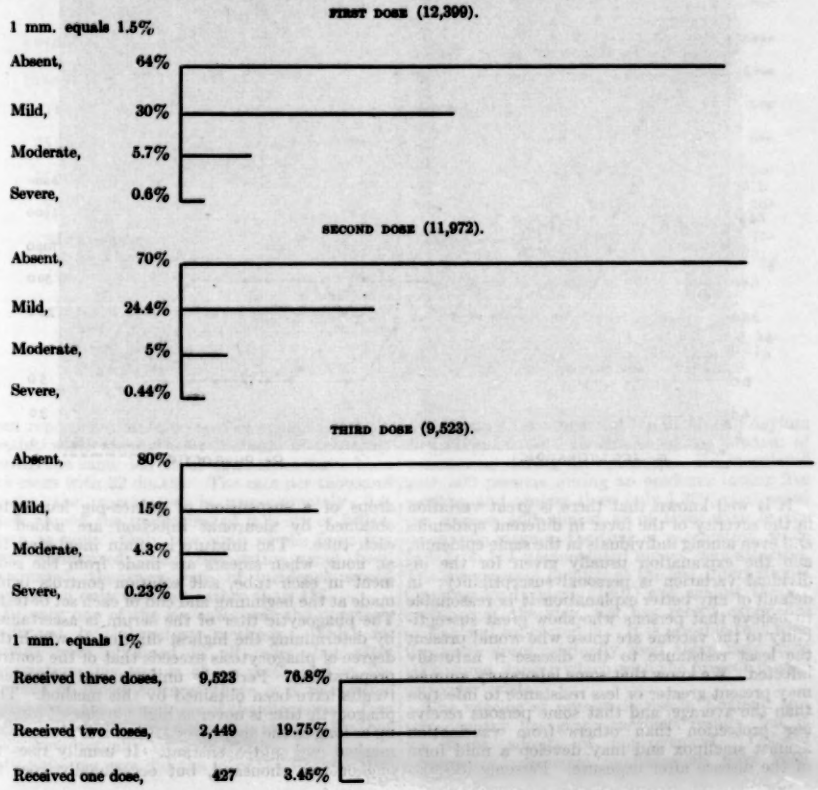
forty-eight to seventy-two hours the inflammatory symptoms begin to subside, soon disappearing completely.

The general reaction is not nearly so uniform in its manifestations; occasionally it begins in thirty minutes to an hour after inoculation, although in the great majority of instances no symptoms appear until after five or six hours. The principal symptoms are headache and malaise, and although they may be extremely mild, they are rarely absent. The average reaction gives rise to symptoms not unlike those felt during the first few hours of an acute cold. In order that we may know the immediate effects, all general reactions have been recorded and grouped in four classes; the first group comprises those cases in which the general reaction was absent; the other groups are called mild, moderate and severe. All men vaccinated are directed to report to the surgeon if unable to attend to the usual duties, and when so reporting the temperatures are taken and recorded. If the temperature is 103 or over the reaction is classed as severe; if between 100 and 103, moderate; if above normal and below 100, as mild; if no temperature is noted the reaction is considered absent unless the man complains of headache and malaise, when it is classed as mild. A classification based on temperature is not altogether satisfactory, but for obvious reasons it is all that is possible.

The results to date have been tabulated and are given below.

There is no discomfort aside from a tender arm when the general reaction is absent, and in the mild cases the symptoms are not particularly unpleasant and these two groups constitute about 95% of all reactions recorded. The moderate and severe reactions together make up the other 5%, and very few of them are really troublesome. The response has occasionally been so severe, exhibiting not only a high temperature, but also chills, vomiting, diarrhea and herpes, as to cause some alarm when seen for the first time, but even

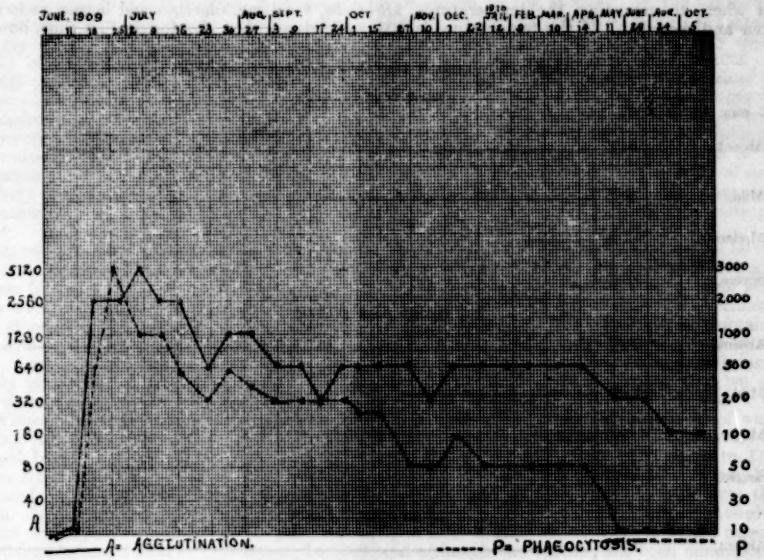
General Reactions Following Vaccinations, 1910.



in these cases the symptoms last but from twenty-four to thirty-six hours and leave no trace with the exception of a few pounds lost in weight. Very few individuals have refused to continue with the immunization because of the discomfort; changes of station, discharge from the service, desertion, etc., are the principal causes for the failure to receive all three doses. We have taken especial pains to secure full reports of all severe reactions, as it was realized that if many occurred it would be increasingly difficult to induce men to volunteer, and for this reason it is gratifying to find so few have been reported. We do not now know the reasons for severe responses nor when to expect them; the fact that a man has already had typhoid seems to increase the chance of having a severe reaction, and in 124 such cases the records show a distinctly higher percentage of marked reactions.

crasy is a condition so generally recognized that we are not surprised to encounter it in this connection.

The late results of vaccination are shown in the accompanying charts. Agglutinins begin to appear on the fifth to eighth day, and increase rapidly. The Widal reaction is often present in dilutions of 1-5000 and occasionally the serum develops a titer of 1-10000 or even 1-20000. Only rarely does it fail to exceed 1 in 5 or 600. The rise in opsonins follows quickly and their increase is just as striking as the development of agglutinins. We have not used the opsonic index of Wright as we have found the dilution method of Neufelt both satisfactory and simple. The serum is diluted as for agglutination, and to measured quantities of each serum dilution is added a couple of drops of bacterial emulsion. The mixture is incubated for an hour at 37° C. when two




It is well known that there is great variation in the severity of the fever in different epidemics and even among individuals in the same epidemic, and the explanation usually given for the individual variation is personal susceptibility; in default of any better explanation it is reasonable to believe that persons who show great susceptibility to the vaccine are those who would present the least resistance to the disease if naturally infected. We know that some laboratory animals may present greater or less resistance to infection than the average, and that some persons receive less protection than others from vaccination against smallpox and may develop a mild form of the disease after exposure. Personal idiosyn-

drops of a suspension of guinea-pig leucocytes obtained by aleuronat injection are added to each tube. The mixture is again incubated for an hour, when smears are made from the sediment in each tube, salt solution controls being made at the beginning and end of each set of tests. The phagocytic titer of the serum is ascertained by determining the highest dilution in which the degree of phagocytosis exceeds that of the control preparations. Perfectly uniform and consistent results have been obtained by this method. The phagocytic titer is never as high nor does it remain up as long as the agglutinative, but it is always well marked and quite constant. It usually rises to one or two thousand, but occasionally goes to

five or even six thousand; it drops at first rapidly and then more slowly, but may still exceed the normal after the lapse of a year.

Bacteriolytic tests have been made from time to time, but no entirely satisfactory method has been found which will give consistent results over a long period. A mere statement of the bacteriolytic titer of a serum has, in our experience, very little value, since it depends almost as much on the culture used for the test as on the serum to be tested.

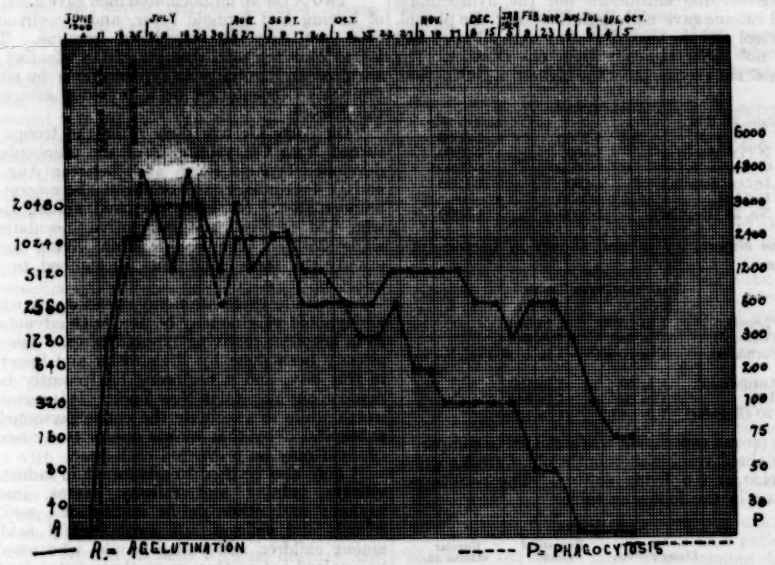
If the usual complement fixation test is used it can be shown that the serum after vaccination contains an antibody which will anchor complement just as after typhoid itself.

Among the 14,000 persons vaccinated there have been reported to date 6 cases of typhoid with no deaths, while among the remainder of the army during the same length of time there have been 418 cases with 32 deaths. The rate per thousand among the vaccinated is approximately 0.4, while among the unvaccinated it is six or fifteen times as high. Only one sixth of the force has been immunized; had the entire army been vaccinated, the same rate of incidence would have given only 36 cases rather than 418.

In only one of the six cases was the diagnosis confirmed by laboratory methods; Widal reactions were obtained in all cases, but after vaccination this test is of no value and in the absence of blood cultures there is a reasonable doubt as to the correctness of the diagnosis. Two of the cases were so mild that it is improbable that they were actually typhoid fever.

In only one case did the fever occur soon after vaccination and in this instance the infection was probably acquired between the first and second doses; when the time came for the third dose the man was sick in hospital. This might be regarded as an instance of increased susceptibility, but as the man crossed the continent during the interval, the infection was probably a coincidence. None of the nine others vaccinated at the same time contracted the disease, while one other case developed among the unvaccinated men of the same regiment.

Aside from this no cases bearing on the negative phase have been reported. The fear of a dangerous negative phase being so widespread has deterred our medical officers from vaccinating in the presence of an epidemic.




Cullinan's [9] experience at the Richmond Asylum in Dublin is proof conclusive of the wisdom of vaccinating during an epidemic. He inoculated over 500 persons during an epidemic lasting five months, and among these only 1.36% contracted the disease, and almost all of these were in the incubation stage at the time of vaccination, while 14.9% of 114 uninoculated nurses were attacked. The concensus of opinion at the last International Congress for Hygiene (1907) was against the acceptance of the idea, nor has recent experience in England supported it. It is possible that with the large doses originally used there may have been some danger which with the present dosage no longer exists.

The vaccine at present in use in England and this country has given excellent results, but it no doubt admits of improvement. Colonel Leishman's [8] principal modifications have been

the reduction of the temperature used in killing the cultures from 60° to 53° and the addition of the lysol only after the vaccine has been cooled. It is not surprising that it has occurred to others to omit heat altogether since the antiseptic is in itself able to effect complete sterilization. Semple and Matson used 0.5% phenol, believing that heat diminishes both the immunizing and the keeping properties of the vaccine. A phenolized vaccine prepared by them without the use of heat was still potent after two years.

In December, 1909, we sterilized a series of vaccines by the addition of phenol, tricresol, formalin, antiformin, absolute alcohol and hydrochloric acid, and in March, 1910, inoculated a number of rabbits.[10]

Neither the antiformin nor the hydrochloric acid vaccine gave high agglutinations; the phenol, tricresol and the heated vaccine were all good and did not differ radically from one another. The formalized vaccine gave the highest agglutination.

AGGLUTININS.

| March 23, 1910. | | April 6, 1910. |
|---|---|---|
| A (Phenol), | 1-2500 | 1-5000 |
| B (Tricresol), | 1-5000 | 1-2500 |
| C (Formalin), | 1-10000 | 1-20000 |
| D (Antiformin), | 1-160 | 1-1280 |
| F (Hcl), | 1-2500 | —— |
| No. 20 (Regular), | 1-2500 | 1-5000 |

Its superiority is also shown in bacteriolytic tests.

BACTERIOLYTIC TESTS.

| | March 24. | April 1. |
|---|---|---|
| A (Phenol), | 1 in 1,280 | 1 in 640 |
| B (Tricresol), | 1 in 640 | 1 in 640 |
| C (Formalin), | 1 in 10,000 | 1 in 40,000 (higher not made) |
| D (Antiformin), | 1 in 40 | 1 in 160 |
| F (Hcl), | 1 in 20 | 1 in 640 |
| No. 20 (Regular), | 1 in 640 | 1 in 1,280 |

A second experiment was arranged to compare a formalized vaccine six months old, a fresh regular vaccine and a living culture. The results are shown in the following table.

AGGLUTININS.

| | Living culture. | Formalized vaccine. | Regular vaccine 32. |
|---|---|---|---|
| July 5, 1910, | 1 in 1,280 | 1 in 1,280 | 1 in 320 |
| July 13, 1910, | 1 in 5,000 | 1 in 10,000 | 1 in 5,000 |
| July 21, 1910, | 1 in 10,000 | 1 in 10,000 | 1 in 10,000 |
| Aug. 6, 1910, | 1 in 2,500 | 1 in 5,000 | 1 in 5,000 |

In this experiment the formalized vaccine made rather the best showing and both vaccines proved equal if not superior to living cultures. Phagocytic determinations point to the same conclusions.

PHAGOCYTOSIS.

| | Living culture. | Formalized vaccine. | Regular vaccine 32. |
|---|---|---|---|
| July 5, 1910, | 1 in 100 | 1 in 100 | 1 in 100 |
| July 13, 1910, | 1 in 500 | 1 in 500 | 1 in 500 |
| July 21, 1910, | 1 in 500 | 1 in 1,000 | 1 in 1,000 |
| Aug. 6, 1910, | 1 in 500 | 1 in 1,000 | 1 in 1,000 |

We may then conclude that a new formalized vaccine is the most effective and that one six months old is equal in power to a regular vaccine of two months.

Our tests of formalized vaccine are still in progress, but from present indications, although there is some deterioration with age, it seems to give greater protection than any other.

A recent experience illustrates strikingly the efficacy of vaccination.[11] On June 14, ten days prior to leaving Washington for Gettysburg maneuvers, 92 members of Company A, First Battalion of Engineers, received the first antityphoid vaccination. On July 2, 52 of the above men received the second vaccination, and July 16, 51 of these received the third. Of the remaining 26 men of the command, a few refused vaccination and others were temporarily absent or on detached service when the first inoculation was given.

"Two of the 26 uninoculated men gave a history of having had typhoid fever, and by virtue of that fact may be considered immune. This leaves 24 of the total strength of 118 who had not acquired an immunity to typhoid fever by either preventive inoculation or a previous attack of the disease.

"On Aug. 11, five days after the troops returned from Gettysburg, 2 of the uninoculated developed typhoid fever, and, between Aug. 20 and 23, 4 secondary cases occurred, also among the uninoculated. No cases occurred among those who had received the preventive inoculations, while 25% of the non-immune, living under exactly the same conditions, succumbed to the infection."

In civil life there are many occasions on which antityphoid vaccine may be used with advantage, as in hospitals receiving typhoid cases. This has already been done by Richardson and Spooner, in this city, and a beginning has recently been made in one hospital in New York. It is certainly worth while to vaccinate the entire personnel of a hospital if by that means one or two cases of typhoid may be prevented each year.

It may also be used to advantage in industrial villages, mining and railway camps, insane asylums and other public institutions, and in schools and colleges. A most fruitful field is among children and young people, who may be immunized before they go to the country for the summer vacation. In our experience the reactions among children are much less marked than among adults, and often, especially among the younger ones, there is no inconvenience whatever.

I wish to add a few words on the subject of the treatment of typhoid fever by vaccine.

Capt. A. B. Smallman [12] reports 36 cases treated in India with 3 deaths, giving a death-rate of 8.3%, which is much lower than the usual rate. Of the 3 deaths, 2 occurred in fulminating cases about a week after admission and after the administration of only one dose of vaccine. Doses of 300 to 400 million bacteria were used on every third or fourth day.

Dr. Semple [13] reports 11 cases. Nine were treated with vaccine, but 2 refused to have it administered; of these 2 cases, 1 ended fatally. All of the 9 vaccinated cases recovered. He believes the method to be free from all risk, easy to

carry out, producing no apparent disturbance in the patient's condition or interfering with any other treatment deemed advisable. His charts show a well-marked increase in the antibodies of the blood after vaccination.

Nichols,[14] in 1909, reported 11 cases. There were no deaths, and the cases were of average severity. One had mild delirium, one intestinal hemorrhage and relapse, one relapse and two were prolonged to thirty-one and thirty-three days. He considered the results inconclusive; they show, however, that the vaccine even in large doses produces no bad effect. Relapses were not prevented, but to what extent the favorable course in most of the cases was effected by the inoculations is undetermined. At the same meeting Behrend reported 12 cases; Ramsburg, Ruffin and French, one case each. A total of 26 cases with no deaths are reported in this article and the discussion.

Watters and Eaton[15] report 30 cases with 2 deaths. One was, however, beyond help when the treatment was begun. The same authors report 4 additional cases without any deaths in a later communication. Their experience leads them to remark that "it might be of further interest to note that during the year 1908, out of 77 cases of typhoid fever in the hospital, 31 were treated by vaccines, the remainder receiving only the regular routine treatment of dietetic, hygenic, hydrotherapeutic and drug measures here in vogue. No selection of patients was made, all coming into certain services, being taken whether mildly or severely ill. As a result, in no case was any one observed to be injured by the vaccine, while the mortality among those thus treated was 3.2% as compared with a death-rate of 11.1% in those not receiving it. About 75% of the cases were favorably influenced."

Capt. H. T. Wilson,[16] R. A. M. C., reports 6 cases with no deaths. In this series the disease appears to have been shortened and the longest duration of the fever was seventeen days. He used large doses, 250 to 1,000 million bacteria. One case had three and the other two doses.

Hollis[17] reports 11 cases with no deaths. He used doses ranging from 1 to 300 million every second or third day; aside from this the patients, who were not selected cases, received no other treatment. During the same season 25 cases were treated with the customary hydrotherapeutic measures and 4 deaths occurred. Hollis notes that the agglutinins were uniformly increased by the vaccine. Relapses were more frequent, 30% as compared with 10% in the unvaccinated. In a few cases the febrile course seemed shortened, but the temperature was equally high in both series, and hemorrhages occurred with the same frequency. On the other hand, headache, gastro-intestinal symptoms and toxemia were less frequent and convalescence more rapid.

He predicts a brilliant future for vaccine treatment.

The total number of cases here collected is 118, with 5 deaths, giving a mortality of 4.23%, which is distinctly lower than has been obtained with any other treatment. This collection of cases is altogether too small from which to draw conclusions, but the treatment has made a favorable impression on nearly all using it.

Pascarolo and Quadrone have treated 20 cases with a living attenuated typhoid bacillus. The cases were selected as being exceptionally severe and the results were satisfactory.

Is there any theoretical basis for the use of vaccines in typhoid? The question is frequently asked and as often answered in the negative. Theobald Smith[18] has stated the problem concisely in the following words: "The presence of virulent living bacteria makes it seem absurd to add dead ones. Why is not the former stimulus enough? Theoretically no advantage can be expected from adding more toxins."

Cases do improve, however, under vaccine treatment and there must be a difference between the stimulus exerted by living virulent organisms and dead vaccines.

The first difference is in the use of dead bacteria; the dose can be controlled and there is no cumulative effect. The second difference is in the use of the subcutaneous connective tissue in inoculations. Typhoid is largely a disease of the lymphoid tissues, which is the place of least resistance in the body. This is equivalent to saying that the lymphoid tissue is the least able of any to form destructive antibodies. The connective tissue, on the contrary, has the power of forming them in great quantities, and they are rapidly carried to all parts of the body by the blood stream. It would seem possible to reinforce the immunity reaction by bringing into the struggle tissues not ordinarily involved.

Another difference is in the strain of the organism used, — an old avirulent culture. In other words, in using vaccines in the treatment of typhoid we need not necessarily inject additional toxins. Our cultures have largely lost the power to produce toxins. We are injecting antigen, which in this case seems to be different from the toxin, and it is capable of stimulating the immunity reaction in the body of a patient without at the same time overwhelming him with poison.

Vaccines cannot be expected to stimulate a patient already profoundly toxic, nor will they improve complicating conditions due to secondary invaders, but in pure typhoid it is not illogical to expect them to benefit.

The following conclusions seem to be justified.

Typhoid has invariably appeared in armies in the past and may be expected in the future.

The usual prophylactic measures are only partially available in camps.

Vaccination is simple and harmless and wherever used has reduced the incidence and mortality of typhoid.

The immunization of every individual in the army is perfectly feasible, and it offers the greatest hope of freedom from this plague in the future.

Antityphoid vaccination has long since passed the experimental stage. Since 1904, 60,000 men have been vaccinated in India, over 7,000 in

South West Africa, and over 14,000 in the United States and in no case has any harm followed its administration. The time has come when its use should be extended, not merely in the military services, but also among the civil population.


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## ANTITYPHOID INOCULATION AS INTRODUCED INTO CERTAIN TRAINING SCHOOLS FOR NURSES IN MASSACHUSETTS.*


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AND
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THE subject of typhoid fever at the Massachusetts General Hospital, with especial relation to its bacteriology and its immunity, had been the chief study of one of the writers (M. W. R.) for twelve years when, in 1909, it was decided to make a beginning at least with an investigation of specific antityphoid inoculation as a method of prophylaxis against the disease.

Experiments with specific sera, filtrates, residues and vaccines had not led to any very remarkable results in the treatment of the declared disease, although the use of these products for the possible prevention of relapses and recrudescences had given results of a distinctly encouraging character. There seemed, however, good reason to believe, especially through the observations of Wright upon the British troops, that in prophylaxis, specific inoculation might have a field peculiarly successful. The unusual incidence of the disease among nurses had also been noted.

Joslin and Overlander [1] had found that "during the years 1902–1906 inclusive, twenty-six nurses contracted typhoid fever while working in six hospitals. The average number of nurses employed each year in these hospitals was 322 and the total number of cases under their charge, 2,988. In other words, for each 114 cases of typhoid fever treated, one nurse came down with the disease. The typhoid morbidity rate for the nurses in these same hospitals was 161 per 10,000 living instead of 20 per 10,000 living, which is approximately the typhoid morbidity rate for the whole population of the state."

As a result these investigators concluded that "the hospital nurse in Massachusetts is about eight times as liable to contract typhoid fever as the ordinary citizen."

Dr. Spooner [2] also, at my suggestion, looked up the cases at the Massachusetts General Hospital and found that, for the ten years previous to 1909, anywhere from two to six of the nurses had come down annually with typhoid fever.

In view of these facts it was natural, therefore, that, in inaugurating the use of specific inoculation, appeal should be made first to the members of training schools for nurses. A start was made at the Massachusetts General Hospital in 1909. The nurses were called together and the situation was placed before them in brief. A call for volunteers was then made and met with unexpected success. The work thus begun at the Massachusetts General Hospital has been continued along similar lines at nine other institutions. The inoculating has been done generally by locally interested physicians under the direction of one of us (L. H. S.). Indeed, the interest and co-operation of the hospital authorities and local physicians has been most hearty and it gives us great pleasure publicly to acknowledge this fact, for without this co-operation no progress could have been made. The following table shows the institutions which have adopted the procedure and the number of individuals inoculated:

| Hospital. | Inoculator. | No. of Cases. |
|---|---|---|
| Massachusetts General Hospital. | (L. H. S.) | 153 |
| State Infirmary at Tewksbury. | H. R. Coburn, M.D. | 56 |
| Waltham Hospital. | R. E. Wilson, M.D. | 32 |
| Salem Hospital. | A. N. Sargent, M.D. | 24 |
| New England Hospital for Women. | M. E. Morse, M.D. | 12 |
| Children's Hospital. | W. P. Lucas, M.D. | 10 |
| Boston State Hospital. | M. M. Canavan, M.D. | 40 |
| Danvers State Hospital. | H. M. Adler, M.D. | 10 |
| Brockton Hospital. | A. L. Beals, M.D. | 17 |
| Worcester Memorial Hospital. | E. B. Bigelow, M.D. | 19 |
| Miscellaneous cases. | (L. H. S.) | 32 |
| | | 405 |

As regards the preparation of the vaccines, the following points are of interest:

The culture used has been an old stock culture, and one utilized for a number of years in the laboratory for the making of Widal reactions. The organisms are grown on agar, suspended in salt solution, heated to 53° C. for one hour, and counted with the use of a Zeiss blood platelet counter. Lysol, ¼ of 1%, is added to prevent the growth of any accidental contaminating organisms. The inoculations are given on the outer surface of the left upper arm at the insertion of the deltoid muscle.

The number of inoculations given has been four, at five-day intervals. In the beginning the initial dose was placed at 50 millions and increased gradually up to a maximum of 200 millions. In

* Read at the meeting of the Boston Medical Library and the Suffolk District Medical Society, Dec. 7, 1910.

[1] BOSTON MED. AND SURG. JOUR., vol. clvii, p. 247, Sept. 26, 1907.

[2] Am. Jour. Pub. Hyg., vol. xix, no. 4, August, 1909.

the more recent series we have increased the dose so that, although the initial dose is still 50 millions, the maximum is now 300 or 400 millions. The local and general reactions experienced by the individuals inoculated have varied in severity. The experience among those inoculated at the Massachusetts General Hospital was approximately as follows:

Ninety per cent showed at most a very slight reaction, and 10% showed a moderate reaction. In only one instance was it necessary for a nurse to give up her accustomed duties, and then only for a period of twelve hours. The specific effect of the inoculations upon the blood reactions, as previously reported, was as follows:

Out of the first 100 cases inoculated at the Massachusetts General Hospital, 94.2% developed in their blood an agglutinative strength of 1 to 25, and 80.6% showed a strength of at least 1 to 50.[1]

In contrast to the experience of the ten previous years, 1909 and 1910 have shown no cases of typhoid fever among the nurses at the Massachusetts General Hospital, unless the following instance may be considered a typhoidal infection:

A nurse who had received regular inoculations ten months previously suffered from an illness characterized by a temperature of 101.8 and all the symptoms of acute but mild infection. Physical examination as well as bacteriological investigation of the blood and feces was negative. The agglutination test, however, was positive at first in a dilution of 1 to 100, and two days later in a dilution of 1 to 200. Her temperature fell to normal on the third day and remained so. In looking back over the history of this case, it seems that two weeks after her series of inoculations, ten months previously, the agglutinative strength of her blood was 1 to 100. Whether the increased agglutinative strength on the third day in the subsequent infection can be regarded as a sufficient evidence for the diagnosis of typhoid fever must be considered doubtful. Even if we admit, however, that this case was one of typhoid fever, its extreme mildness is suggestive. Curiously enough, the same individual is now suffering from an attack of measles and the blood shows once more a typhoid reaction in a dilution of 1 to 100.

Among the individuals inoculated in hospitals other than the Massachusetts General Hospital it is stated that local or general reactions were absent or slight in 83% of the cases; of moderate severity in 13%; and more severe in 4%. Agglutination tests were performed in a few cases in two hospitals and all those inoculated at a third. Those in which the blood was investigated showed strengths ranging from 1 to 50 to 1 to 600.

Among the nurses inoculated in hospitals other than the Massachusetts General Hospital, two cases of typhoid fever have developed. The first case showed its earliest symptoms shortly after the first inoculation had been given. Mild fever was present for two weeks and convalescence is now in progress. In this hospital an epidemic among the nurses was already in progress and there can be little doubt that this nurse received her first inoculation during the incubation period.

The second case presents many points of interest. The patient was a woman who had been nursing two cases very sick with typhoid fever. Both were extremely delirious, absolutely incontinent and both subsequently died. The attending nurse received three inoculations with a vaccine similar to that used upon eighteen of her associates. None of the inoculations produced more than a slight reaction. Thirteen days after her first inoculation, however, and three days after her last inoculation, she first showed signs of a mild typhoid infection. Her temperature, however, never exceeded 102.5° and she suffered no interruptions in her convalescence. It seems reasonable to suppose that this nurse also was inoculated during the incubation period of the disease. In view of the fact that she was probably infected with organisms which were responsible for the death of two other individuals, it may not be entirely unreasonable to assume that the severity of her infection was attenuated by the inoculations which she received. In any case, these two histories serve very well to demonstrate that there is no danger in inoculating those individuals who in the near future are likely to be exposed to infection. In other words, the danger to be apprehended by what was designated by Wright as the negative phase of immunity said to follow bacterial inoculation seems to have no substantial basis in fact. The practical importance of this observation lies in the fact that, in the presence of a local epidemic of typhoid fever, widespread inoculation might be advised and carried out without fear that the individuals inoculated would thereby be made more susceptible to the disease than before.

As previously stated, the local and general reactions following inoculation are in the majority of individuals inconsiderable. It has been the experience, however, of one of us (L. H. S.) that latent or chronic foci of infection of non-typhoidal character may be lighted up by the typhoid inoculations. There were four such instances. First, chronic infectious arthritis of the knees; second, subacute urethritis; third, chronic infectious arthritis of the ankles, associated with flat foot; and fourth, chronic cholecystitis. No permanent damage was done, to be sure, but these recrudescences, by their temporary discomfort and inconvenience, were sufficient to make precautions advisable. Before inoculation, therefore, it is best to inquire somewhat into the previous history in search of old or latent infections, and to refuse to inoculate all persons showing a temperature over 99°.

In this connection it is interesting to note that just as latent infections seem to be rendered acute temporarily by typhoid inoculation, so it has also been observed that a typhoid agglutination reaction, when once established in the body by specific inoculation, may be stimulated to reappearance by other infectious processes. Four instances have been seen in which strong agglutination strengths have been found in the blood long after inoculation and associated with such

[1] Boston Med. and Surg. Jour., vol. clxii, p. 37, Jan. 13, 1910.

diseases as grippe, tonsillitis, pleuro-pneumonia and measles.

Our experience, therefore, covers 1,588 inoculations practiced upon 405 individuals. As yet there have been no untoward results, and we believe that the inoculated individuals have acquired an increased resistance to typhoid infection which will last them for several years at least. We expect in the coming year to extend the influence of these inoculations, especially among nurses and others attendant upon the sick. Furthermore, we have strong faith that the procedure will, within a short time, find increasing favor with the general public, which, exposed as it is to many sources of infection, is in great need of specific protection.

## THE FRESH-AIR SCHOOL.*

BY JAY PERKINS, M.D., PROVIDENCE, R. I.

DURING the past few years we have heard a great deal about the conservation of our natural resources, and we have come to realize that as a nation we have been very prodigal of such resources as land, lumber, coal and iron. The public has not yet, however, though a beginning is apparent, come to realize how prodigal we are of the greatest of all natural resources, the health of the community. Those who are making a study of public health fully realize that the former dreaded diseases, smallpox, typhoid fever, yellow fever, cholera, plague, malaria and the contagious diseases of childhood are controllable and are coming under control. Typhoid fever was formerly prevalent every summer in most large centers of population. The proper disposal of sewage and the purification of water supplies has largely obliterated it. When a large number of cases of typhoid fever now appear in the same locality in successive years some one is almost or quite criminally negligent. The problem of typhoid fever was comparatively simple — proper disposal of sewage and purification of water and milk supplies.

With tuberculosis we have a somewhat similar problem, but one which is much more complicated, and yet tuberculosis can be brought under control as is typhoid fever to-day. No case of tuberculosis arises except following infection from a preceding case, the infection here usually coming through excretions from the mouth of some one having tuberculosis. The control, however, of the excretions from the mouth is a very different problem from the control of the excretions from the bowels, the usual source of infection in typhoid fever. Another great difference in the two diseases is the method of onset. In typhoid fever we have an incubation period of about two weeks and the disease runs its course in a few weeks more. With tuberculosis the germs may be taken into the body and remain inactive for many weeks, months or even years, probably.

The tubercle bacillus is a true parasite. So far as known it does not multiply outside of some animal body, and in nearly all instances the bacilli causing consumption come from some other human being. Once lodged in the human body their future existence is purely a biological question and their development depends upon the relative vitality of the body and the bacilli. If the body has sufficient resistance to this organism, the bacilli will be killed before multiplying. No one is sufficiently strong to withstand infection with tubercle bacilli if a sufficient number of virulent germs gain access at the same time. This, however, would refer to artificial and not to natural infection. If the body is not sufficiently strong to at once kill any tubercle bacilli with which it is infected, these bacilli either lie dormant, giving us latent infection; or multiply sluggishly, giving subacute infection; or multiply rapidly, as in an acute infection; or the body is shortly overwhelmed, as when the germs are distributed throughout the whole body. The vitality of the host and of the parasite vary inversely, and thus it is that a body may hold the parasite in subjection indefinitely or a sudden weakening of the vitality of the body may allow the parasite to become more virulent and still further weaken the body.

Laboratory workers are beginning to be able to find substances in the blood and tissues of the body which are the elements that resist infection, but even the finding of these elements does not change facts which have for a long time been known, — that the real strength of the human body must depend upon the taking into the body and the right use in the body of oxygen and nourishing food, and upon the proper regulation of the functions of the body by necessary exercise, sleep and suitable clothing, and upon the keeping out from the body all poisonous substances.

I have taken your time with these statements because I consider them as essential for a full understanding of the Fresh-Air School and of the ultimate ends we have in view through the establishment of these schools; and let us at the beginning have a clear understanding that these are fresh-air schools and not strictly schools for the tuberculous. Children having active tuberculosis should never be permitted in the public schools. They should not be allowed to attend public school for their own sakes and I would keep them out on this ground. The fresh-air schools of the present day are for any children physically below par whether they have latent tuberculosis or not. The real relation of tuberculosis to the fresh-air school should be that the widespread campaign against tuberculosis has given a stimulus for more rational methods of living and that the majority of physically imperfect children, and in many instances the apparently perfect children, are infected with tuberculosis. The real object of these schools is both to conserve the health of the individual and to give the state better returns for the money spent in educating its children as much as it is to help stamp out the disease tuberculosis.

* Read before New England Association of School Superintendents, Boston, Nov. 11, 1910.

Tuberculosis being the stimulus which has brought about the establishment of these schools, we will first consider them in reference to that disease. You may think that but few pupils in our public schools are infected with tubercle bacilli. If so you are mistaken. We now have a a test which shows with reasonable accuracy whether or not a person has been infected with tubercle bacilli. With adults this does not mean much because most adults have been at some time infected. With children, however, it means a good deal, for almost no child is born with tuberculosis. As showing the frequency of tuberculous infection in children, and the age at which they become infected, we now have the results of numerous investigations. One series of 509 children who came to public hospitals for treatment for diseases other than tuberculosis were examined by the tuberculin test and positive reactions were obtained in 271 children, the proportion of positive responses increasing from 9% at the age of two to 51% at six, 85% at ten and 93 to 95% between eleven and fourteen (Vienna). Another investigation carried on in the Children's Clinic at Vienna showed that in a series of 401 autopsies of children, 160, or 40%, were found affected with tuberculosis. Of these last many came to the hospital because of tuberculosis, but in another clinic to which children were brought for acute illnesses and to which healthy babies were brought for observation and in order that the mothers might be taught to care for them, the tuberculin test was used. In the first two years no reaction was found. The increase in the number of reacting children of more advanced years was nearly as high as in the first group and reached 70% in the tenth year. These results, however, were obtained in Vienna, where tuberculosis is more prevalent than with us.

In Paris a careful examination was made of all the school children in a certain ward. They found that out of 896 children, 141 were affected with latent but unmistakable tuberculosis, 14% of the boys and 17% of the girls being affected, and this was by ordinary examinations and not by the use of the tuberculin test.

In New York City, 2,295 school children were examined for tuberculosis, and 29% were found to be affected. In investigating the children of tuberculous parents in Boston 679 examinations were made, and definite signs of tuberculosis were found in 36%.

In New York City, in an examination of 150 children of tuberculous parents, in 51% definite signs of tuberculosis were found.

In Chicago, in an examination of 146 children of tuberculous parents, definite signs were found in 29%.

When patients have been under treatment for active tuberculosis, as in a sanatorium, they are discharged with the disease still active or with the disease arrested or as apparently cured. By "disease arrested" is meant that the patient's temperature has become normal, that he is not suffering from the poison of the disease, and that for some time there has been no progress of the disease, but the germs are still there, ready to become active upon slight provocation. By "apparently cured" is meant that the person has for some time been free from all symptoms of the disease, that the bacilli have been absent from the sputum for at least three months and that examination of the chest gives only the signs of a healed lesion, but we know that even here the germs are still present in the body and that absolute cure is a question of years, that in order to obtain an absolute cure the individual must live a life very similar to that under which he became apparently cured, or else the disease will again become active. A cause of the partial failure of our sanatoriums to accomplish that which was expected of them lies in the fact that so many of the patients after being apparently cured or having the disease arrested return to live and to work under improper conditions and the disease again becomes active.

A further study of the children who are infected with tuberculosis shows that during the later years of school life but a small percentage of those who react to tuberculin give evidences of active tuberculosis. The explanation of this is twofold: The infection in children is not usually of the lungs (any part of the body may be affected) and the body has sufficient resistance to hold the parasite in abeyance, and, secondly, where the body has not this resistance, the disease becomes active, the children are removed from the school and are found either in attendance at some hospital or in cemetaries.

It has been found that children with tuberculosis of the bones and of the glands (scrofula) are very amenable to treatment. Thus the Sea Breeze Hospital at Coney Island has obtained excellent results in treating these conditions, as found among the poor in New York, and in Rhode Island the Crawford Allen Hospital (a branch of the Rhode Island Hospital), located on the shores of Narragansett Bay, is obtaining results which a few years ago would have been considered marvelous. This work is, however, done at great expense, and even then only a slight proportion of the affected children can be treated. The general treatment at these institutions is simply an out-of-door life, good nourishment and good care.

Now we have the data necessary for a consideration of the relation of the public schools to tuberculosis. Children who are affected with tuberculosis are in the schools and must be in the schools. They are there as arrested, as apparently cured, or as latent cases, and, just as with the patients who leave the sanatoriums, whether they go on to complete recovery or whether they are to enter our hospitals and add to the already enormous burden of hospital maintenance, or prematurely enter our cemetaries and thus be a loss to the state as individuals upon whom the state has already spent considerable money, will depend to a large extent upon their environment and the teaching they receive in the schools.

Almost every community of any size is now spending a large amount of money in anti-

tuberculosis work in educating the public in regard to tuberculosis, in caring for those who are sick with tuberculosis and in improving the home conditions of the poor. A large part of the work is being done at the wrong end. It is like trying to put out a fire by fighting the smoke and the blaze instead of getting at the origin of the fire. The only real way to reform a man is to do it while he is a child, and with the children is where we must fight tuberculosis before we can eradicate it. How is the present school life meeting the problem? You know better than I do what the school life of the children is, and I have no criticism to make except as relates to fresh air. We all know how inadequate are all systems of ventilation when put to the test of a crowded schoolroom and when regulated by ignorant janitors. We also know that no system of ventilation, so far as concerns the purity of the air in the room, equals open windows. In the ordinary schoolroom this method of ventilation has, of course, great disadvantages and can be used in winter only at intervals and with the children moving about, marching or taking calisthenics, and so long as the present system exists it should be compulsory for the teachers to open the windows at stated intervals and have the children exercise in some way.

The object of the fresh-air school is to have the air of practically the same purity as the out-of-door air and at the same time have the ingress of fresh air so regulated that the exposure of all the pupils and in all parts of the room will be practically the same. That this is perfectly feasible, even in our New England winter climate, without undue exposure of the children, we have demonstrated for three winters in Providence, and the same fact is now being demonstrated in various other places, one of the best schools now being located in Pawtucket. I am speaking of the fresh-air school as a part of our regular school system and not as applied to patients who are actually sick. School work with these patients is being carried on somewhat in day camps, in sanatoriums and in hospitals for tuberculous children, as was done during the past summer in our own Crawford Allen Hospital.

I will speak but briefly of how our fresh-air school is carried on because so much has been printed in regard to it. The exposure of the open side or sides of the room should be chiefly south, as the blustering winds of winter are usually from some point north of east or west and our school year never includes the summer months. The feet of the children must be protected, and this we have found is best done, and cheaply done, by means of the sitting-out bag such as is commonly used in treating tuberculous patients. The body is never strengthened by suffering, and care must be taken that the children are perfectly comfortable. The children are seated with their backs to the open side of the room on account of their eyes, — the whole room being sufficiently lighted so that no shadow is cast, — and the back of the sitting-out bag is made sufficiently long so that it can come up over the back of the child in case a strong current of air comes into the room, and when needed heated soapstones are placed inside the bag at the feet. The children wear their caps and mittens when the weather is sufficiently cold to demand it except when the mittens are removed for written exercises. The children are given some form of nourishment, as hot milk or soup, at about ten o'clock. They bring a lunch with them which is eaten at about twelve o'clock, to which is added hot cocoa made with all milk and to which cream is added when served, and a hot pudding containing a large amount of milk and eggs, or a substantial hot stew. The lunch is served at a regular table, the children being taught to prepare the table, clear it and wash the dishes, this being done during the noon recess. They have to wash their hands and faces and brush their hair before eating, and cleanse their teeth after eating, and incidentally tooth brushes are introduced into homes where they were heretofore unknown. The noon hour is shortened and the school dismissed earlier than the regular schools that the children may get home before dark, since several come from some distance. And here I would make a strong plea for one session for all young children, say the first two or even three grades. It is successfully done in several progressive cities and should be done in all schools. In this case, too, the one-session plan has seemed to us to work better than to have part of the children go home for lunch and to go home later at night. In pleasant weather, especially in the spring and fall, they are encouraged to spend what may remain of the day in out-of-door play.

Another important thing in the success of this work is that the children are visited in their homes and the home conditions studied and improved. In many instances, even where ignorant parents object, the children insist upon having fresh air at night.

Now what has been the result of the fresh-air school? Children who could not attend the ordinary schools with any regularity because of ill health, and especially because of frequent colds, can attend this school regularly and, sometimes after part of the year, in other cases after one or two years in this school, have so improved in health as to be returned to the regular schools and attend them successfully, to make room for others who need the fresh air more, the school being an ungraded one and as such limited to twenty-five pupils. Some children who even if they attended the other schools regularly could not accomplish satisfactory work have here caught up with others of their grade and have gone back into their regular rooms with good standing. The children are examined at the tuberculosis clinic at the Rhode Island Hospital and at the school are under the medical supervision of one of the regular school inspectors, Dr. Ellen A. Stone. They almost invariably gain in weight; the oxygen-carrying power of the blood, as shown by hemoglobin tests, improves; the whole appearance of the pupils changes markedly for the better and the work is a grand success from all points of view.

The public gets better returns for the money spent purely from the educational standpoint, and the educational effect in the homes is of great value, fewer children become applicants for admission to hospitals, and I might here add that during the summer months many of these children are kept in the day camp. We look, however, for results far wider than is obtained in the individual schools. We want it impressed upon teachers to pay greater attention to the physical side of their pupils. We want to have all schoolrooms become, if not fresh-air rooms, at least reasonably ventilated rooms. We want to have the children taught the simple but essential rules of hygiene, not simply the ill-effects of alcohol and tobacco. We want them taught that many diseases, even so-called colds, are diseases which are transferred from one person to another and most commonly by secretions from the mouth and that the infection is usually taken through the mouth; that such things as pencils, chewing gum, apples, cups, spoons and forks, passing from the mouth of one individual to the mouth of another, is liable to carry disease with it even if the person from whose mouth it comes appears to be perfectly healthy, for it is a fact that we frequently have germs of disease in the mouth and yet have sufficient power of resistance to these germs so that we ourselves are not diseased but the person to whom the germs are passed may lack that resistance and contract the disease. This has been more than amply demonstrated by investigations in regard to diphtheria, but it is equally true of other diseases. We would have them taught personal cleanliness, the necessity of frequently washing the hands and cleansing the teeth. We would have this teaching given as a part of general hygiene, avoiding unnecessary use of the word "tuberculosis." We would have them taught the necessity of proper nutrition of the body, that it is not right for a child to go to school having nothing for breakfast but a cup of tea or coffee (in Pittsburg, of 396 boys in one school, 92 came without a breakfast), and we would have, as Boston is doing in all of its schools, and Providence in part of its schools, some nourishment given to school children at recess time. The proper time to teach these things is during childhood. We cannot possibly teach them to the present generation of adults, and more especially as a large percentage of the parents sending children to our public schools are of foreign birth, themselves ignorant and not speaking the English language. We would have the older girls of the grammar schools taught cooking and something of food values and of what we should eat to maintain healthy bodies. In other words, we would teach the next generation, while they are still children and we have a chance to, the essentials of hygiene and right living, as well as mathematics and English and an appreciation of the beautiful.

The fresh-air school in Providence is run by the city as one of its regular schools, and a dollar a day is allowed for lunches. The pupils are selected by the League for the Suppression of Tuberculosis, and the extras, such as sitting-out bags, car tickets for those who live at a long distance, etc., are furnished by the League, and the home instruction is given by the tuberculosis nurses. The school had its origin because of the need of such a school for children who had been cared for during the summer in a day camp conducted by Drs. Ellen A. Stone and Mary S. Packard. The suggestion for the school, however, came in part from a paper read by Dr. John A. Lowman, of Cleveland, Ohio, at a meeting of the National Association for the Study and Prevention of Tuberculosis. Such schools have now been started in various places and Providence will soon have additional fresh-air schools. The work is growing rapidly and whatever is said or done it is bound to grow, as all good things grow in our growing civilization. We are pleased with the result of our experiment and feel as sure of the ultimate growth of the movement as did the Old Hen in Rostand's "Chantecler," when to his query, "Have I grown up?" she replied,

"Be it soon or be it late,
Tadpoles must come to frog's estate."

## THE CARE AND MANAGEMENT OF THE TABETIC BLADDER. III. PROGNOSIS AND TREATMENT.

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THE writer wishes first to discuss the prognosis of tabes as influenced by lesions of the urinary organs; second, to describe the methods and results of treatment of the bladder symptoms.

It was shown in my first paper that urinary disturbances occurred in 90% of cases of tabes dorsalis. It was also found that in 70% of cases there was residual urine and that in 50% of patients the urine was infected, and cystitis was established.

We know that residual urine resulting from any cause will eventually become infected, usually with bacilli of the colon group, and that under these circumstances a renal infection finally occurs. It need not concern us here whether this is secondary to a bladder infection or whether the bacterial invasion is primarily renal and descends to the bladder. The point is that the kidneys become infected.

Most authorities agree that tabes dorsalis *per se* is rarely fatal. Death is usually the result of some intercurrent disease. Of these diseases, those of the urinary system are among the most frequent.

Gowers says, "Kidney complications are the most common; they often develop insidiously and only manifest themselves when life is in peril. . . ."

Oppenheim's opinion is: "If ataxia and disturbances of the bladder develop early . . . a short course is to be expected. . . . In the last

stages the patient dies quickly of cystitis and pyelonephritis."

Somewhat similar is the statement of Sachs: "The prognosis is most unfavorable in those cases in which the early occurrence of vesical symptoms has led to a cystitis or a pyelonephritis. . . ."

To demonstrate this fact to my own satisfaction I have collected the autopsy protocols of 28 cases of disease of the spinal cord in which there was a degeneration of the posterior columns, the pyramidal tracts, or both. In 20 a definite clinical or anatomical diagnosis of tabes dorsalis was made.[1]

In 16 of the 28 cases (57%) grave lesions of the bladder, ureter, and kidney were found. In the absence of definite statements of the exact cause of death, I cannot say positively that it was due directly to disease of the urinary system, but there is no question of the activity or extent of the disease in any case, and in most there was little else to account for death. The lesions noted were cystitis, ureteritis, pyelitis and pyelonephritis. In a few there were renal or vesical calculi or hydronephrosis.

This investigation enables me to share the opinion of other writers as to the importance and gravity of the diseases of the urinary tract in tabes. It also justifies the following conclusion. First, at least 50% of all tabetics having no urinary infection will eventually acquire one; second, in an equally large number death will be due more or less directly to disease of the urinary organs such as pyelonephritis and uremia.

Before continuing, I would make an earnest appeal to the neurologist to procure for us a larger number of autopsies in tabes, and to the pathologist to pay more attention to the lesions of the urinary tract. Post-mortem examinations of tabetics are comparatively rare, even in large institutions where such cases are seen in goodly numbers. I remarked in my last paper that the pathology of the nerve supply of the bladder in tabes dorsalis had never been studied. It may also be said that the urinary organs of these cases receive but little attention from the average pathologist. The foregoing remarks about the importance of these organs would seem to warrant a more detailed and accurate description being accorded them.

## TREATMENT.

The treatment of the cases under consideration must have three objects. First, to postpone as long as possible the onset of urinary infection; second, to reduce such an infection, if already established, to its lowest possible state of activity; third, to relieve symptoms.

I showed in my first paper that trabeculation of the bladder was found in patients with no urinary symptoms whatever, and that it was a sign of increased effort on the part of the detrusor. It was also seen that the compensatory power of the bladder eventually fails, and that residual urine results. This stagnant pool of urine invites infection, and from this time on the life of the tabetic is in danger.

No matter what his condition, he should be given at once one of the many urinary antiseptics, preferably those whose decomposition results in the liberation of formalin in the urine. The usual dose is gr. v, three times a day, but this can be increased to gr. x or xv, if desired. This drug must be taken without remission, in the absence of contra-indications, *as long as the patient lives.* I cannot emphasize this point too strongly. Although these antiseptics may not actually kill the bacteria already in the body, they at least render them less active.

Let us consider now a case of tabes, with a clean urine, and in whom we can find no urinary symptoms whatever. After two or three days of this treatment the bladder should be explored. In the presence of a urinary antiseptic, and with careful asepsis, this can be done without fear of contaminating the urine. The patient should be asked to micturate, preferably with a full bladder, in order to empty that viscus as completely as possible. The urine should be carefully analyzed. He should then be catheterized, preferably with a medium-sized, soft rubber catheter, and if residual urine is found, its amount should be measured. Before removing the catheter, the bladder should be filled with a solution of boric acid, or potassium permanganate, as a precaution against infection. In the absence of residual urine we know that the compensation of the bladder is still unbroken.

The question of cystoscopy now comes up. While not advisable or necessary in every case, there are few if any contra-indications to it, and we have seen that it may be the means of establishing or confirming a diagnosis. It shows the exact condition of the bladder and ureters, and the information thus gained may be of great importance. We also saw that, owing to the anesthesia of the posterior urethra and bladder neck, cystoscopy is a painless procedure. Therefore I do not hesitate to say that in the large majority of cases it can be done without injury to the patient, and without fear of infecting his bladder. Böhme likewise insists on the harmlessness and value of a complete investigation of the genito-urinary tract.

In the absence of trabeculation and residual urine, the patient must continue with the use of his urinary antiseptic, reporting once or twice a month for observation. Sooner or later his attention, or that of his physician, will be directed to his bladder, and any changes in that organ should be taken in hand at once.

If the urine is clean and the catheter shows a residual, more active treatment must be begun. The patient is to be seen once or twice a week. Each time the residual urine is drawn off and measured, and the bladder irrigated with one of the mild antiseptic solutions mentioned above. The value of regular, routine treatment is strongly

[1] These cases were collected, one from the Massachusetts General Hospital; fourteen from the Long Island Hospital, Boston, to whose superintendent I am grateful for his courtesy; thirteen from the Danvers State Hospital, Hathorne, Mass., whose pathologist, Dr. H. M. Adler, I wish to thank sincerely for his painstaking search of the records.

emphasized by Gowers, Sachs and Squier, and it has been demonstrated by my own experience. Its effect is threefold. It gives a brief respite to the work of the detrusor muscle, and by this the amount of residual urine is often considerably reduced; it removes, for the time being, the stagnant urine from the bas-fond; and, finally, it replaces this by an antiseptic solution, of which the effect is to lessen the chances of bacterial invasion, chiefly by reducing the congestion of the bladder mucosa.

As evidence of the beneficial results of this simple, routine treatment I will quote from a few of my records.

S. H., Massachusetts General Hospital.

October, 1910. Residual urine, 3 pints. Catheterization, and irrigation of the bladder twice a week.

November, 1910. Residual, 22 oz. "Has not felt so well in ten years."

Residual is now about 15 oz.

A. R., Massachusetts General Hospital.

March, 1910. Residual, 1 oz. After being catheterized and washed out a few times no residual urine could be obtained.

O'C., Massachusetts General Hospital.

May, 1909. Residual, 14 oz. at first. After a few days it was only ½ oz.

E. F. H., Private case.

April, 1910. Residual, 12 oz. Catherized and washed. At the next visit the residual was reduced to 6 oz.

It is fair to say that the residual may vary considerably from time to time. After a series of sittings, when the amount is less each time than at the previous visit, it may suddenly be found to be greater than when treatment was first started. Then it slowly decreases, finally reaching its former low mark. This is one of the vagaries of tabes of which I can offer no explanation.

Another important feature of what we may call this "prophylactic treatment" is to instruct the patient to urinate at regular intervals throughout the day, *whether he has the desire to do so or not.* I tell him to pass his water on arising in the morning, at twelve o'clock, at six o'clock, and, again, before he goes to bed at night. Other writers have also laid stress on this.

If the urine is already infected, the treatment is similar, but more vigorous. In such cases the dose of the urinary antiseptic may be increased to gr. x or xv, three times a day. The bladder is emptied and washed regularly as before, but more frequently. It must be done at least twice, preferably three times a week, or even oftener, if the conditions warrant it. Irrigation should be done, not with boric acid, or potassium permanganate, but with the more efficient silver nitrate solution (1-5000). The effect of this on a cloudy, ill-smelling urine, is very marked. In many cases it clears up at once and becomes perfectly clear. In others, a urine opaque and foul at the start gradually improves to such an extent that the odor is no longer offensive, and it shows only a slight haze.

The following notes will illustrate these points.

Massachusetts General Hospital, Out-Patient Department No. 137528.

October, 1909. Urine foul, very cloudy, alkaline, residual 10 oz. Bladder washed twice a week with silver nitrate solution. Residual, 6 oz. Urine much clearer, better control. At the present time the residual is 16 oz., urine perfectly clear and clean.

Massachusetts General Hospital, Out-Patient Department No. 111346.

March, 1910. Urine cloudy, acid, strong odor (colon infection). Bladder washed with silver nitrate. "Hasn't passed his urine so freely for over a year." No incontinence now. After a week or two of this treatment, the urine became clear and sparkling; no residual.

S. H., Massachusetts General Hospital.

November, 1910. Residual, 3 pints. Urine like milk. Bladder washed with silver nitrate twice a week. Twenty-two ounces residual, urine much clearer. At the time of this writing, the urine shows only a slight turbidity, and the patient says he has not felt so well in years.

Massachusetts General Hospital, Out-Patient Department No. 111247.

October, 1909. Urine foul, cloudy, contains much pus, B. coli present. Residual, 3 or 4 oz. for some months. Daily treatment.

In February, 1910, the residual varied from 1 to 3 oz., the urine was no longer foul, and only slightly cloudy.

I might cite other cases in whom this treatment had wrought much improvement. By the reduction of the amount of residual, and by the improvement of the condition of the urine, hence also of the bladder itself, many patients had better control (broadly speaking) of their urinary apparatus than they had had for a long time. Nocturnal incontinence, urgent urination, and even retention were sometimes entirely done away with, after one catheterization and washing of the bladder. In most patients this improvement continued as long as they were under observation.

I now propose to show that the varied and annoying bladder symptoms, due perhaps quite as much to the inco-ordination of the muscles of micturition as to bladder infection, may be greatly influenced by still another form of treatment. I refer to the re-education of the muscles concerned in urination. It is well known that by what are called the "Fraenkel exercises," the muscles of locomotion can be re-educated up to a remarkable degree of efficiency. Those of the bladder are quite as amenable.

The writer claims no originality for this. Its value was shown him in a most convincing and entertaining way by the late Dr. Samuel Alexander, of New York, at his clinic in the Bellevue Hospital. His cases were mostly post-operative, but the principle is the same, and I have satisfied myself that it is as applicable to tabetics as to those with incontinence following prostatectomy.

The following statement, by Williams, explains briefly and clearly how the results of the re-education of muscle is brought about.

"The return of functional capacity, acquired by what is known as the Fraenkel exercises, is not due to the re-establishment of old nerve paths, or the establishment of new channels of afferent

information, as is so often supposed; but it is due to the patient learning volitionally to utilize the imperfect afferent information which is all that remains to him, and to create from it a new set of automatisms, to replace those which now functionate in so disorderly a fashion."

Let us now take a typical case of tabes with bladder symptoms. He has difficulty in starting the stream, the desire to urinate is infrequent, the urine trickles from the meatus like molasses from a jug, occasionally he wets the bed, or when he coughs he is annoyed by a little gush of urine into his trousers. One can readily appreciate the wretchedness and suffering of such an individual.

The confidence and attention of the patient must first be gained. Let him see that you want to help him, that he can help himself greatly by co-operating with you, and assure him that the future offers hope. Impress it upon him that he must obey you absolutely. All this is easily brought about if undertaken in the right way, but both patient and physician must be prepared to spend much time and great patience before any permanent change occurs. Empty and wash his bladder as usual. Fill it to its capacity with a 1-5000 solution of silver nitrate. There may be a tendency to incontinence at this point, but order the patient to retain it. He generally does so, or will, after a little practice. Now have him retain the fluid, as best he can, for perhaps a quarter of an hour, increasing this period at each visit. Meanwhile have him practice this at home by retaining the urine for a time before each micturition. The improvement caused by this simple procedure is often amazing. A little later, when complete control has been gained, more complicated gymnastics are employed. After filling the bladder, tell the patient to micturate. Then, without warning, order him to check the stream. Now tell him to begin once more to empty the bladder. Continue in this way, starting and stopping at irregular intervals, until the bladder is empty. I usually repeat the performance by filling the bladder a second time.

At first, your order, either to start or stop the stream, will meet with little or no response. But, after sometimes a surprisingly few days of effort, the patient is able to obey with alacrity. He has learned to concentrate his whole attention on the act of micturition, even as he does on his locomotion when taught to do so. He awaits your order with his whole mind on the subject, and, when you tell him to stop urinating, he contracts his sphincters and perineal muscles, sometimes with visible effort, and the order is executed. The more he improves, the more encouraged he becomes, and the more he tries to do what you tell him. It becomes his pride to show you how athletic he really is, and how beautifully his muscles work, even as the small boy displays his ability to run or jump. He takes real pleasure in demonstrating his ability to hit the opposite side of the basin with the stream from his bladder, a great contrast to the drooling urination which annoyed him at first. He coughs violently and frequently, yet not a drop leaves his bladder. He shows you his dry underclothing. For these and many other newly acquired comforts he shows prompt and ample appreciation.

To cite a concrete example of what can be accomplished by these bladder exercises, I will give a résumé of the following case. It was one of the worst I have ever seen.

Massachusetts General Hospital, Out-Patient Department No. 111247.

Male, age sixty-five years. Came to the Genito-Urinary Out-Patient Department in the latter part of January, 1910.

Three months previously he began to have frequency of micturition and incontinence. Urination about every five minutes, no normal sensation. Only a small amount passed each time. Stream small, and of low pressure. Considerable dysuria. At night his urine leaked constantly, requiring the use of a urinal, which he also wore in the daytime.

Urine very cloudy, strong odor, acid, trace of albumen. Sediment contained much pus, no casts seen. Culture shows pure growth of bacilli of the colon group. Residual, 4 oz. Owing to the severe cystitis, the bladder was much contracted, holding only about 5 oz.; hence the incontinence was essentially the overflow from a full bladder.

The patient came to the hospital every day, his bladder being emptied and washed each time with silver nitrate solution. He was given urotropin, gr. x, three times a day. Muscle training was begun at once with daily practice. This continued until March, 1910, and then twice a week until June, 1910. Improvement was slow, but generally steady; on some days, however, the patient seemed to have lost all that was gained. At first the stream trickled from the meatus; it could not be started or stopped at will, and incontinence was essentially complete. There was much scalding with urination.

After a month or six weeks the residual was reduced to an ounce (occasionally it would be 2 or 3 oz), the urine was only slightly turbid, there was no dysuria. The stream could be ejected for a distance of several feet, control was so good that my orders to start or stop it could be obeyed at once. The frequency subsided, so that the patient not only went for as long as two hours, day and night, without urinating, but also felt the desire to urinate, and could control it until he reached a toilet. Finally, he abandoned his urinal at my advice, and went about "dry shod." The bladder capacity was now always 5, generally 6 oz., partly on account of the improvement of the cystitis, partly on account of the stretching to which I subjected it by gently forcing in the fluid.

Some one has said that "you can't make a silk purse out of a sow's ear." I do not claim that this feat can be performed even now. But there is no question that the cases under consideration can be put on the road to comfort, and that the ultimate mortality from diseases of the urinary system can be greatly reduced. I might also add that the treatment mapped out by the neurologist, and that just described in no way interfere with one another. On the contrary, the combination of the two is to be regarded as absolutely essential to the welfare of the tabetic.

The conclusions to be drawn from this investigation are,

1. Infection of the urinary tract occurs in over 50% of patients with tabes dorsalis.

2. The mortality from such an infection is nearly 60%.

3. Catheterization and irrigation of the bladder, at regular and frequent intervals, combined with the constant use of an efficient urinary antiseptic will (*a*) delay, prevent or reduce the activity of urinary infection; (*b*) postpone the appearance of residual urine, or diminish its amount if present; (*c*) relieve symptoms.

4. Re-education of the muscles of micturition, combined with local treatment, will cure or relieve most of the symptoms which harass the life of the tabetic. It is, therefore, of the utmost importance.

5. The combined treatment of the nervous system and of the urinary tract is essential for the welfare of the patient.

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## Medical Progress.

### REPORT ON PEDIATRICS.

BY THOMAS MORGAN ROTCH, M.D., AND CHARLES HUNTER DUNN, M.D.

#### RECENT RESEARCHES IN DIGESTION, NUTRITION AND FEEDING.

An interesting paper, by Meara,[1] in the *Archives of Pediatrics*, summarizes and reviews some of the recent advances made in the subjects of the infantile digestion, nutrition and feeding. He gives a review of the known facts about the process of normal digestion, in the light of the most recent investigations, pointing out particularly that the old view of the large part played by incomplete development in young infants can, in the light of the most recent researches, no longer be held. A review of the researches of Czerny and Keller,[2] Uffenheimer[3] and Tobler[4] shows that all the digestive ferments present in the adult have been found in the young infant, so that the identity of the digestive function in infancy and adult life, in so far as the ferments and chemical nature of the products found are concerned, is established.

We believe that at present it would be going too far to regard the processes of digestion in infancy and adult life as identical on this evidence, or to conclude that imperfect development plays no part in the disturbances of function seen in infancy. No evidence is offered showing that the function in infancy is not more easily disturbed by slight causes, or that such disturbances are not partly due to underdeveloped function.

Meara mentions a distinction which, in the light of a number of recent researches upon the bacteriology of the intestine, is assuming great importance, namely, between the processes of fermentation and putrefaction, although he does not clearly explain this difference, and appears to minimize the rôle of bacteria as compared with the rôle of improper chemistry of the food.

He reviews some interesting work of Schwartz[5] on the differences between human milk and cow's milk in respect to the emulsification of the fats. Schwartz found that the fat globules are surrounded by a zone of clearer substance, which he calls periglobular substance, of which the elasticity varies in cow's milk and human milk. It is much less in cow's milk, causing the fat very easily to go out of emulsion, from slight causes, such as even the act of sucking. It may be increased by heating, which may account for the easier handling of such milk by some infants.

Alexander and Bullowa,[6] in recent studies on the protective action of colloids in milk, have shown that some colloids are insensitive to electrolytes and are capable of dissolving again after desiccation. Others are readily coagulated by electrolytes, but cannot be redissolved after desiccation. The former are called reversible, the latter irreversible, colloids. The reversible colloids possess the property of protecting the irreversible colloids from coagulation, and permit them to redissolve after dessication, and reversible colloids acting in this way are called protecting colloids. In milk, casein is an irreversible, coagulating colloid, and lactalbumen a reversible, protecting colloid. The authors believe this protecting action throws a strong light on the differences in coagulation of cow's milk, with its larger ratio of casein to lactalbumen, and human milk with its smaller ratio. This protection prevents the curds from becoming tough and leathery in the stomach, and it may be increased by the addition of certain substances, among which is sodium citrate, the action of which in increasing the digestibility of milk may possibly be explained through its action as a protecting colloid.

Meara takes up the various food elements in turn, reviewing certain recent publications having a bearing on the problem of nutrition. He quotes Orgler[7] to show that differences in the chemistry of the casein in human milk and cow's milk have yet to be demonstrated. In support of the view that the infant is as well able to handle the excessive casein of cow's milk as the smaller amount found in human milk, he mentions Langstein's[8] work, demonstrating that the stomach contents of infants show about the same amounts of peptones and albumoses after cow's milk and after woman's milk; also Orgler, who found, in both instances, the same amount of nitrogen in the stools.

The work of Meyer,[9] who caused children to thrive on human whey plus cow's casein and fat, while they failed to thrive on cow's whey plus human casein and fat, is brought forward as additional evidence that casein cannot be the injurious factor in artificial feeding.

We believe that this evidence does not justify any such conclusions as to the casein and that the fallacy can be seen in the use of the words "the njurious factor." It is to the idea that there is

*an* injurious factor, one factor more important than others, that most of the faulty conclusions in modern infant feeding can be traced, as well as to the idea that facts demonstrated as true of some infants are true of infants in general. These researches merely prove that some infants can digest and absorb the casein of cow's milk as well or better than that of human milk, but do not prove that this is true of all infants, or that the contrary may not be true of some.

The harmless character of casein has been further supported by certain recent studies on the curds found in the stools of infants, many of which studies show that the curds are due to other substances. This question of the composition of the so-called casein curds is still a subject of discussion upon which opposite views are held, although recent work has thrown considerable light on the subject. It has been definitely proved that the curds are not exclusively due to casein, and a recently published study by Meyer and Leopold [9] have shown they may be composed of fats, fatty acids, bacteria and epithelium. This does not, however, prove they are always due to these substances, or that they are never due to casein. The results of careful studies by Talbot [10] on this subject show that they may be due *either* to the above-mentioned substances or to casein. He found that, while the small curds are composed mainly of fat, mostly in the form of fatty acids and soap, the larger curds are, in fact, composed of some proteid, probably casein or one of its derivatives, which, on coagulating, entangles the milk fat into its meshes. The demonstration that the curds are not always casein is a valuable addition to our knowledge, but it does not prove that casein cannot be an injurious factor in artificial feeding nor that casein can rightly be looked upon as the most innocent and easily handled of the food constituents.

Meara discusses the function of the proteid in supplying nitrogen for the repair of waste, for growth and for furnishing heat and energy. In this connection nothing very new is brought out. He emphasizes the well-known importance in artificial feeding of arranging the food so as to spare the nitrogen for storage.

In speaking of the proteids, he not only takes the view that no harm is to be apprehended from difficulty of digesting the casein, but entirely neglects the rôle of the proteids under the influence of bacteria in the intestine. The subjects of fermentation and putrefaction are wholly ignored in connection with the proteids.

In regard to the fat, the differences in the fats of human and cow's milk, both the physical differences in the emulsion brought out in the work of Schwartz, and of Meyer and Leopold, and the chemical differences, such as the higher contents of oleic acid and other acids, are discussed. Meara's conclusions, that in view of these differences our efforts at dealing with fat intolerance by making quantitative changes only are crude, are certainly justified. Unfortunately, the progress of our knowledge has as yet given us no better method.

A large part of Meara's paper is devoted to the elaboration of a practical method of feeding based on the aspects of the problem of nutrition discussed. Briefly, the basis of this method is the assumption that metabolism experiments have established a definite protein need, expressed in per cent of the caloric needs. Taking approximate caloric needs as having been established by the energy quotient of Heubner, he so distributes his fats, proteids and carbohydrates, and so arranges his quantities and intervals, as to fulfill the protein requirements with as little burden on digestion as possible. As a result, he believes that the use of cow's milk may be reduced to a simplicity, that the use of creams is unnecessary and that the majority of infants may be successfully fed on dilutions of whole milk without the aid of creams. He gives a summary of the uses of dilution of whole milk in the Breslau clinic.

We do not at all agree with Meara's conclusions in this respect. In the first place, we do not believe that the caloric and protein requirements of infants of different ages have been established to an extent sufficiently definite to permit of such universal application in practical feeding. The data as to the protein and caloric needs of children are not very extensive. The valuable observations of Camerer [11] were based on the study of his own children only. Czerny and Keller [2] have collected and analyzed all the results on this subject up to 1906, and the literature on the subject has been recently summarized by Selter.[12] In the first place, the figures of the various observers show wide variations. More significant, however, is the fact that the figures in most cases are deduced by taking averages of the results of a series of experiments. We believe that many of the difficulties encountered in our efforts to apply the results of the scientific researches of continental investigators to practical infant feeding may be traced to this method of using averages. Such a method presupposes that the answer to the problem is represented by a fairly constant figure and that to find this figure is the only task of the investigator. This assumption of a fair degree of constancy may be applicable to laboratory investigations but is not applicable to investigations on living infants, in which it is absolutely unwarranted. It is quite possible to conceive that a series of researches upon living infants might give an average which was nowhere near the truth for any one infant in the series, because an average may be obtained from a series of cases in which each case represented an extreme on one side or the other. We believe that the available evidence from living infants goes to show that protein and caloric requirements are so modified by individual variations, and by other factors, such as varying power of digestion and assimilation, that extremes are the rule rather than the exception.

Two methods may be employed in estimating the protein and caloric requirements. In the first method, infants are fed on various arbitrarily chosen foods, of calculated protein and caloric values, and the results noted; in the second

method each infant is fed on a food adjusted experimentally, by careful percentage modifications, until the best results are obtained for the individual child. Then the calories and protein ingested are calculated. It is the first of these methods which has been mainly used in the studies of caloric and protein requirements. We believe the second method, which takes into account the factor of individual variation, is better adapted to give an idea as to how far caloric and protein requirements may be employed in practical infant feeding. There has been little work done by this second method. Ladd [13] employed it in a study of twenty artificially fed babies. Some of his conclusions are as follows: "The average energy quotient required in each quarter of the year varied so widely from the extreme low and extreme high quotients, and bore so little relation to the rate of growth, that one may seriously and with reason doubt the value of making it the basis by which to calculate the infant's food requirements. . . . The caloric value of the food, expressed either in terms of the number of calories ingested daily or as the energy quotient, is not the most important consideration in determining the quality of an infant's food. The nutrition of an infant depends primarily on its power to digest and assimilate milk. These functions are best served by modifying the percentages of the constituents of milk so as to adapt the food to the individual needs of the infant."

While caloric needs cannot be too rigidly and universally applied as a basis for proper artificial feeding, we believe that an appreciation of approximate caloric requirements should be used to serve, not as a basis, but as a guide and control, in intelligent feeding. When used in this way, as a control, it is frequently of service in answering some of the questions presented by a particular feeding problem and will prevent wide and obviously harmful deviations. Our estimation of the caloric value of the food given should be made in all difficult cases.

The method of feeding outlined in Meara's paper is further based on the results of researches on the problem of nutrition outlined in the first part of his paper. We believe that the objection to the method lies in the assumption that researches carried on with a certain number of infants are true of infants in general. This assumption is the basis of a host of so-called methods, or simplified methods, of feeding, each one of which is based upon certain facts established by a particular research.

From the earliest times there has been a tendency in infant feeding to regard each addition to our knowledge as a fact of transcendent value in the solution of the problem of nutrition, capable of a wide application; the result has been a series of methods in which may be traced the successive steps through which the sum of our present knowledge has been attained. We believe that each of these steps should be regarded as a single addition to our knowledge, applicable only to certain infants, and that our feeding should be based on the sum of our knowledge. At present the sum of our knowledge points to individual variation as the most important factor in the problem, to meet which we can use no single method, but require a multiplicity of resources, among which every addition to our knowledge should be reckoned as one, providing us with one weapon to be used in certain individual cases.

One point brought out by Meara appears to us to be of great value in practical artificial feeding, namely, the question of the amounts to be given at a feeding. The amounts given in most textbooks are based on anatomical measurements of gastric capacity. They do not represent the physiological capacity, that is, the amount which an infant may properly take at a single feeding, which is considerably greater than the amounts based on anatomical measurements. The question of physiological capacity has been discussed recently in an article by Mosenthal.[14] His tables are derived from Pfaundler and Camerer. Rotch,[19] as early as 1893, pointed out that the physiological capacity differed from the anatomical, and gave tables showing both. The comparison between the figures for anatomical and physiological capacity given in Rotch's textbook, compared with those for physiological capacity given by Mosenthal, is shown in the following table:

| | Physiological. | | Anatomical. |
|---|---|---|---|
| | Rotch. | Mosenthal. | Rotch. |
| First month, | 70.5 ccm. | 105 ccm. | 75 ccm. |
| Second month, | 96.6 ccm. | 125 ccm. | 105 ccm. |
| Third month, | 118.8 ccm. | 145 ccm. | 120 ccm. |
| Fourth month, | 137 ccm. | 145 ccm. | 135 ccm. |
| Fifth month, | 158.4 ccm. | 170 ccm. | 165 ccm. |

It will appear that the figures given by Mosenthal for physiological capacity are much larger than those of Rotch. This can probably be explained on the ground that the babies on which Mosenthal's figures (quoted from Pfaundler and Camerer) were based were given all the milk they would take, and could handle, whereas Rotch's figures are based on babies who were thriving on measured amounts without showing signs of hunger. The reason for the physiological capacity being greater than the anatomical is explained by the recent work on the digestion of milk. It has been shown that coagulation begins at once, and that the milk is separated during the meal into solid and fluid portions. The passage of the fluid portion into the the duodenum begins at once.

Meara believes that the physiological capacity should be used as the basis on which to determine the amounts to be given at a feeding. Here again we cannot agree with Meara as to the advisability of a general application of any such rule. Babies will frequently, under various circumstances, such as a lessening of the digestion power from some outside cause, take more milk than they can properly handle. Again, the figures, being based on averages, are not suited to indiscriminate application to individuals. It is probable that in this respect also the factor of individual

variation plays the most important part in the feeding problem, and that babies cannot successfully be treated as a class, but must be treated as individuals. The exact amounts and intervals of feeding can only be determined by practical experience and must be fitted to the particular patient. Experimental work on anatomical and physiological capacity can only furnish us with approximate guides, serving as controls, to enable us to avoid dangerous extremes. It is probable that the anatomical capacity should be considered as the minimum, and physiological capacity as a maximun. Experience has shown that in feeding it is safer to begin with minimum figures and to increase only when increase is indicated in the individual case.

One of the most recent and significant additions to the literature of the subject of nutrition is found in the publications of Finkelstein.[15] The basis of his work is the idea of a unity of a multitude of disturbances of nutrition, which idea was originally due to the work of Czerny and Keller, but which Finkelstein worked out in detail in his clinic in Berlin. He attributes the greatest variety of disturbances to "food injury," which so weakens the functions of nutrition that a diminution for the tolerance for food is produced. He divides this disturbance of nutrition into four stages. The first stage he calls a disturbance of balance (Bilanzstörung) which is characterized clinically by a failure to respond to an increase in the quantity or quality of food; this failure to respond he calls the "paradoxical reaction." The children fail to gain on a food which they appear to digest well. He attributes this disturbance to the fat in the food, regarding the proteid as absolutely innocent.

In the second stage, the resistance to bacterial action is lowered, fermentation processes begin, with a reaction of the mucous membrane, and local symptoms appear. This disturbance is regarded as primarily due to fat, but it may be due to excessive carbohydrate or to varying tolerance to different carbohydrates.

The third stage is called that of alimentary decomposition, characterized by steady diminution of the powers of assimilation and progressive loss of weight. This stage is regarded as due entirely to the food injury, the fats and carbohydrates being responsible. These food substances are regarded as withdrawing from the body some important biologic substance necessary for proper assimilation. The old ideas of the rôle of bacteria in producing fermentation, decomposition or infection of the tissues is largely disregarded. There is intolerance of fat and increasing intolerance of sugar. Only human milk, in extreme cases, can relieve this stage, though in the milder cases a gain may be obtained by careful cutting down of the food.

The fourth stage, that of alimentary intoxication, may develop during any stage, or without previous symptoms, its first manifestation being a rise of temperature. Among its symptoms are diarrhea, loss of weight, fever and disturbances of the nervous system. The intoxication is regarded as coming from the food, sugar being always the factor causing fever. The fat contributes to the sugar intoxication, by intensifying decomposition, and thus increases the susceptibility to intoxication by sugar. Decomposition is not regarded as due to the absorption of injurious substances, but rather to the withdrawal of certain constituents from the tissues. Intoxication is due to a foreign substance, sugar, circulating in the blood. Sugar may produce fermentation only, fermentation and decomposition, or fermentation and intoxication.

Just how and why the fat and sugar bring about these nutritional disturbances is the chief subject of research by many continental and some American investigators. Meyer,[16] reviewing our knowledge of the rôle of the salts in metabolism, believes that it is through the salts that the fat and sugar exert their injurious influences. The fats, in forming soap stools, and the carbohydrates, in forming fatty acids, divert the salts and thus rob the tissues, the salts being very important in metabolism.

These views of Finkelstein and his school are so new, and so widely in opposition to previously accepted views, as to appear revolutionary. It is quite impossible at this time to express an opinion as to what will be their final value, or their bearing upon the problem of practical infant feeding. We believe that in all probability they will be found to represent facts of value as an aspect of the problem of nutrition. Their fault will come, as usually happens, from too general application, without sufficient reckoning of the factor of individual variation. Already the authors of these views have applied them in a method of infant feeding which involves a highly artificial elaborately prepared infant food containing a high amount of casein, a minimal amount of carbohydrates, a variable amount of fat and a diminished amount of salts called "*Eiweissmilch*." We have already pointed out the fallacy of this method of applying the results of scientific research. The danger comes from taking truths which are parts or aspects of the whole, and using them as truths of especial or transcendent value. We have had brought forward successively as the chief cause of disturbances of nutrition, first, the casein, then the fats, and now finally the carbohydrates and the salts. Even the whey proteids have by no means escaped blame. Each advance has been considered as of sufficient value to warrant a new method of feeding, instead of only of sufficient value to supply us with one new weapon.

We cannot believe, for instance, that food injuries are the whole cause of nutritional disturbance. It has been repeatedly shown that the great prevalence of such disturbances in the summer months cannot properly be attributed to food injuries, but that other factors enter in, such as impaired power of digestion from external influences, and bacteria. These factors are entirely neglected in the views of Finkelstein and his school. That loss of weight is chiefly due to withdrawal of a biologic substance from the body, instead of to insufficient

absorption, or to poisoning by bacterial products, is far too revolutionary for complete acceptance. That intoxication is due to sugar circulating in the blood, instead of to the products of putrefactive organisms, will take long to establish.

As to the reported results of feeding with *Eiweissmilch*, we can only point out that, in the history of infancy feeding, good results have been reported from each new method, and always will be reported, because the factor of individual variation will always make such results possible.

Before closing this discussion of the subject of recent advances in the problem of feeding and nutrition, we must call attention to an article by Kendall,[17] which brings out certain features of the other aspects of the problem. Kendall discusses the rôle of lactic acid bacilli in intestinal disturbances, giving a very complete summary of the most recent views on this subject. He points out that the purpose of giving living cultures of lactic acid bacilli, as elaborated by Metchnikoff, is to restrain the activity of proteolytic (or putrefactive) bacteria in the intestinal tract. The proteolytic bacteria act upon protein and protein decomposition products, forming aromatic substances which act as poisons to the host. There are two distinct types of bacterial activity in the intestine, to differentiate which the recent distinction between fermentation and putrefaction has been made. It is the proteolytic or putrefactive bacteria whose products have been shown to be capable of producing harmful intoxication.

There are three types of bacteria, of which the exclusively putrefactive, such as the proteolytic bacteria, are one, and the exclusively fermentative, such as the types of lactic acid bacilli, are a second. The third type is by far the largest and includes many of the best known of the intestinal flora, the bacillus coli being a familiar example. This third type is called facultative, because the organisms develop well in proteid media, and also in media mainly carbohydrate, with only a small amount of protein. In the former case their products are typical of putrefaction, in the latter of fermentation, and they, therefore, combine the attributes of both varieties of organism. This has been shown by laboratory experiment. The addition of carbohydrate to the culture media will change the process from the putrefactive type to the fermentative. In the intestine, the addition of carbohydrate not only changes the facultative organisms from putrefactive to fermentative development, but has been found to cause a decrease both in the numbers and the vitality of the obligate proteolytic organisms, accompanied by a corresponding increase in the normal intestinal fermentative organisms.

The object of giving living cultures of lactic acid bacilli is to further restrain proteolytic activity through the liberation of lactic acid in the midst of the developing putrefactive organisms.

Kendall points out that the bacillus Bulgaricus, which is largely used in lactic acid therapy, is found to localize itself chiefly in the small intestine, whereas the bacillus acidophilus, another strain, and the most thoroughly studied of the intestinal lactic acid bacilli, is found in the large intestine. If the accepted idea that the seat of bacterial activity upon protein is in the large intestine is true, the acidophilus should be used rather than the Bulgaricus. Kendall believes that there may be very decided bacterial decomposition of protein in the small intestine as well. He demonstrated this in experimental animals. It would seem that both strains of lactic acid bacilli may have their special value.

The cause of objectionable proteolytic activity is an excess of protein in the diet of the host, or any factor causing stasis, or impaired absorption of protein, which conditions stimulate the development of the putrefactive organisms. The restraint of this activity may be brought about by adding to the diet easily fermentable carbohydrate and living lactic acid bacilli, which act in the way described above.

There may exist in young children three types of bacterial activity of an undesirable nature: (1) A true proteolytic, with the formation of putrefactive products. (2) A mixed putrefactive and fermentative, in which proteolytic and facultative organisms act symbiotically, producing much gas and destruction of protein. (3) A true fermentative, in which the overgrowth of lactic acid bacilli is so unrestrained as to cause harm. Salge has shown that in certain of his cases an enteritis resulted when the normal intestinal lactic acid bacillus proliferated to an unusual degree.

The sharp contrast of these views of Metchnikoff and his followers, as summarized by Kendall, and those of Finkelstein and his followers, outlined above, is only an example of the many-sided character of the problem of nutrition and the associated gastro-enteric disorders. We have, on the one hand, the followers of Finkelstein, attributing everything to food injuries, regarding the proteid as absolutely innocent, and the chief source of injury as lying in the fat and carbohydrate. We have, on the other hand, the followers of Metchnikoff, attributing part of the trouble to bacteria, regarding the proteid as chiefly guilty in certain disturbances, and the carbohydrate as the saving element. Each view is supported by experimental evidence and clinical observation. The solution lies in regarding the problem as one of many aspects.

For the clinician, the chief difficulty lies in deciding which aspect of the problem is present in a particular case. What we need most is an increase in our means of determining which of many possibilities is actually present. In this connection, such work as that of Morse and Talbot,[18] in giving us a simple method, easy of clinical application, for estimating intestinal conditions from examination of stools, is very valuable, perhaps more valuable than some of the prolonged, detailed, scientific researches upon limited aspects of the problem. Such researches have provided us with plenty of weapons. What we need is increased means of knowing how to use them intelligently. At present we must know the

various aspects of the problem, and all the multiplicity of resources with which their study has supplied us. We have still comparatively little to guide us in our choice of resources except personal experience, and it is better to proceed by grouping experiments, using all our resources, than by the consideration of any one aspect of the problem which limits our choice.

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# Reports of Societies.

## AMERICAN LARYNGOLOGICAL ASSOCIATION.

THIRTY-SECOND ANNUAL MEETING, HELD IN WASHINGTON, D. C., MAY 3, 4, 5, 1910.

JAMES E. LOGAN, M.D., *President.*
JAMES E. NEWCOMB, *Secretary.*

(Concluded from No. 26, p. 998.)

### XVIII. THE CUTTING IN TWO OF A LARGE STEEL PIN, WHILE TRANSFIXED IN THE LEFT BRONCHUS, AND ITS REMOVAL BY LOWER BRONCHOSCOPY. EXHIBITION OF A BRONCHOSCOPIC PIN-CUTTER AND FRAGMENT-HOLDER, DEVISED TO MEET THE EMERGENCY.

By W. E. CASSELBERRY, M.D., Chicago.

It is proposed, as a general principle, in order to facilitate the bronchoscopic extraction of immovably transfixed pointed objects, such as pins, needles and perhaps open safety pins, to first divide them, via the bronchoscopic tube, into two or more parts; and the instrument or pin-cutter devised for the purpose is commended.

A glass-headed, 1½ inch, very sharp, black, steel pin was immovably transfixed in the first bronchial branch and across the left bronchus of a fifteen-year-old girl, where, without causing serious discomfort, it had remained for ten weeks. Freedom from suffering for so long a period naturally leads a patient to forget or doubt the presence of a foreign body, and as the physical signs are indefinite when the object is but slightly obstructive, the x-ray supplemented by bronchoscopic inspection may be the only means of positive demonstration. That the x-ray, however, has its shortcomings and needs to be supplemented by direct observation through the bronchoscopic tube was evidenced by a serious delusion in the interpretation of the first x-ray plate. An extraneous or false shadow, "very like a pin," which appeared on the right side, was accepted for a time as the actual outline, whereas the pin was lodged on the left side, its real shadow being visible, but obscured in the shade of the sixth rib. Furthermore, nothing short of the upper bronchoscopy could have disclosed the exact position and state of transfixion of this pointed object, information which was absolutely essential to devising a plan for its removal.

"How it happened" is worthy of comment in order that women may be warned against a certain habit while gowning. The young woman, with pin in mouth and skirt in hand, in readiness to drop the skirt over her head, raised on high her outstretched arms, — an act which is identical with the first movement in Sylvester's method of artificial respiration, which owes its power to the fact that raising the arms expands the lungs and causes an inrush of air, the mouth opening itself as if by instinct; and, at the some moment, to let the skirt fall clear of her hair, the head was thrown backward and face upward, bringing the mouth, larynx and windpipe into a straight vertical line, — an attitude identical with the sword-swallower's position. The pin, let loose, simply dropped with the air current head foremost into the left main bronchus, and on downward till its head and two thirds of its stem had passed into the first bronchial branch; where, being too long to quite make the turn, it was arrested, with its head compressed against an upturning segment of the bronchial branch and its point against the opposite wall of the main bronchus. Both ends of the pin being against a barrier, the impact of cough sufficed to drive its point firmly into the broncial wall. At the first operation, that of upper bronchoscopy, every effort was made to displace it. The pin was grasped at the depth of eleven inches with various bronchoscopic forceps, the grasp being many times renewed to change forceps or vantage point of the grip, but without avail, except the conviction that it must first be cut in two.

A valid criticism, which suggests itself, is the disposition of the parts of a pin, when cut, to fly asunder, hence, possibly, to drop out of sight or out of reach of the bronchoscopic forceps. But this contingency did not occur, for the beak-shaped, slotted scissor-like cutting mechanism is so devised and elaborated that one of the two fragments will adhere with dependable regularity and firmness in the serrated slit alongside the blade bevel, as long as the blades are not permitted to reopen, and, moreover, the operator can elect the fragment to be so held by turning the blade. Therefore it was planned to minimize the major risk of losing the smaller fragment by electing it to be held in the grasp of the pin-cutter.

It was deemed expedient, by reason of the novelty of the procedure, to operate this time by lower bronchoscopy, although it is now realized that the pin-cutter and the principle of its use are applicable as well at the longer range of upper bronchoscopy. A few additional efforts to extract the pin without cutting having proven futile, the pin-cutter was passed down the bronchoscopic tube. It operated exactly as planned, one could hear the snap, see the larger fragment shiver and then discern the small pointed piece in the beak of the instrument, held fast in which it was withdrawn, and in another minute the larger piece, in the grip of a bronchoscopic forceps, came safely out.

DR. CHEVALIER JACKSON, Pittsburg, referring to Dr. Casselberry's statement in regard to the unreliability

of the x-ray negative, said that all have been deceived by radiographs at times, and a surgeon should declare his right to make an examination anyhow when it seemed required. Dr. Emil Beck has a method of taking radiographs with the aid of bismuth paste which is very useful in locating a foreign body. It requires no great amount of intellect, but an extreme degree of ingenuity to remove a foreign body without injury to the patient, and such cases as this and the one reported the previous week by Dr. Richardson show how ingenuity can overcome almost insurmountable difficulties. He then presented an instrument which he had devised for the purpose of removing a safety pin lodged point up in the esophagus or trachea, which had proved to be especially useful in little patients where the esophagus is to small to allow the introduction of other instruments.

Dr. Coakley, New York, reported a case similar to that presented by Dr. Casselberry, in which after four ineffectual attempts to remove the foreign body, made at intervals of two weeks or so, the patient developed an abscess of the lung and died. If they had had the aid of the instrument shown by Dr. Casselberry, their efforts might have proved successful.

Dr. Halsted, Syracuse, related another similar case. The skiagraph showed the pin in the first division of the right bronchus. A number of granulations had formed around it. By upper bronchoscopy, the shank of the pin was caught with the Jackson forceps, but in withdrawing it some resistance was encountered and the pin was lost. A lower bronchoscopy was then performed and with the alligator forceps the head of the pin was removed, but the shank could not be found, although diligent search was made. There was a good deal of mucus and some vomiting during the operation, and it may have been lost on the floor. At any rate, the child was relieved, the tracheotomy tube was removed in the course of a few days and an uneventful recovery followed. He felt confident that the shank had been removed at the first attempt when the resistance was encountered, but had been unobserved in the vomitus, and was lost. It might just as well have gone into the lung, but the x-ray did not show it.

Dr. Emil Mayer, New York, said that all owed Dr. Casselberry a great deal for devising this ingenious instrument, which not only cuts but grasps, so averting the danger of cutting off a piece of pin and losing it. He then cited a case in which, being unable to see or feel the foreign body, he had refused to make further attempts to remove it. The foreign body had been in so long that granulations had formed around it; it was not producing symptoms, and he felt that it would be harmful to the child's best interests to attempt to remove it. The child is perfectly well, except that it has a tack in its bronchus.

Dr. R. C. Myles, New York, said that the suffering caused by the attempt to dislodge a foreign body from the respiratory tract is often very intense, and cited an amusing case of a Russian patient in which he finally succeeded in removing a long tack after employing various devices and overcoming the variously expressed protestations of the patient.

Dr. Casselberry, closing the discussion, said that, with no thought of self-aggrandizement, but to offset the extreme modesty of Dr. Jackson, he must take exception to his statement that only mechanical ingenuity, not intellect, is required for these cases. Mechanical science, of course, is merely mechanical, but the application of science to these cases, indeed, the application of science in general, is intellectual. It takes intellect to control and retain the patient under circumstances of this sort. The whole time required to examine and make the various efforts to find the pin was four and a half months. To maintain control of your patient for so long a time, and even of your own courage, and to have the force of your own convictions to persevere, — that is intellect.

### XIX. Removal of Malignant Growth of the Larynx, with Specimen and Presentation of Patient.

Charles W. Richardson, M.D.

The patient was a man forty years of age who had suffered from epithelioma of the left vocal cord. The removal of a portion of the growth showed it to be epithelioma, and immediate preparation was made for operation. The operation was a thyrotomy without tracheotomy. The subsequent steps in the operation were the subperichondrial separation of the growth from the wing of the thyroid cartilage, and then the removal of the mass in its entirety beyond the line of safety by scissors. Healing took place rapidly, convalescence being perfect, and the patient is now living, thirteen months after the operation, without recurrence, and with an excellent voice.

Dr. Solis Cohen, Philadelphia, said that it gave him much pleasure to hear these papers. A number of years since he had removed a case of obstructive growth of the larynx by the subperichondrial method, which was original with himself. The perichondrium is pulled off to a certain distance beyond the growth, then everything is taken up together and cut. The growth is not touched at all, and there is no possibility of conveying anything into the healthy portion of the body with a knife with which a tumor has been cut. It is five years since this patient was operated upon and he is still alive.

Dr. Ballenger, Chicago, reported a case on which he had performed this operation a year ago for epithelioma of the larynx. Two months ago, the patient, a man sixty years of age, wrote that he was in good health and there were no signs of recurrence.

Dr. T. P. Berens, New York, said that during the previous week he had reported before another society the case of a man forty-nine years of age with epithelioma who gave a history of hoarseness of five years' standing. The condition had been diagnosed as tumor of the cord, but his family physician had persuaded him not to have anything done to his throat. Dr. Berens removed intralaryngeally a large mass which occupied the anterior two thirds of the vocal cord, supposing it to be a papilloma. Dr. Jonathan Wright, however, pronounced it epithelioma, and, after consultation with Dr. Delavan, he slit the larynx, having in mind to do what Dr. Cohen referred to — raising the mucous membrane and periosteum, but, finding that the periosteum was more adherent over the center of the false cord, he took out the wing on that side. With the application of adrenalin he blanched the mucous membrane and had an absolutely dry wound to work upon in the larynx, and made a rapid operation. The patient carried the tube only three days, and made an uneventful recovery, with a very useful voice. He is an insurance agent and is busily engaged in his work.

Dr. Cornelius G. Coakley, New York, reported the case of a patient with a history of hoarseness for two years, and who presented himself with the appearance of malignant involvement of the right vocal cord. The perichondrium was soft, and there was no use in leaving it. The whole of the cartilage and the right half of the larynx was removed. The patient did well and returned to his home in the West, but later a contraction occurred and a tracheotomy tube had to be inserted. Two weeks ago there were signs of trouble and sections were made and pronounced by the pathologist to be carcinoma. The man has

involvement of the glands of the neck and the arytenoids, and he had advised against further operative procedure. Four or five years ago he had done a hemilaryngectomy, and a year since he had seen this patient with an apparent good result. In another case two years after operation there appeared to be a recurrence, but examination showed it to be a cyst, which was removed, and the patient has been all right since.

DR. ARTHUR W. WATSON, Philadelphia, said that Dr. Cohen had evolved this operation theoretically more than fifteen years ago, and demonstrated it on a dog, at which time he had the pleasure of assisting him. Shortly after that he wrote a paper on the subject for the Laryngological Association meeting in Boston, so there is no doubt that the method originated with him.

DR. BERENS said that he had failed to mention in the case he reported that the scar on the side of the larynx removed does not take up as much room as the true vocal cord would do in the position of rest, so there is no contraction where the cartilage was removed. The patient has the whole wing on one side.

DR. WATSON, referring to what had been said of taking out the wing where it involved the perichondrium, said that it had occurred to him that instead of taking out the cartilage and the perichondrium on the other side, it might be better to simply split it on the inner side, and leave that as an outer wall to the pharynx.

DR. SWAIN, New Haven, said that he did not understand whether Dr. Richardson had spoken of the formation of a cicatricial process, or by what means he got a loud tone. He himself had reported a case which had been three years without recurrence, and now, two years later, the patient is all right and can speak in a good clear voice. In this case he had removed the whole involved area, including the vocal cord, and there has been added in the way of a cicatricial formation a new band which is almost similar to the old vocal cord. It has a free clear edge with some range of motion, so that there is a pretty fair pair of vocal cords. He would like to know if that is the uniform result of the operation.

DR. MAYER, New York, reported the case of a patient who came to him with all the appearance of cancer of the larynx, in which he had refused to take off even a small piece for examination unless the patient were willing to have the whole removed if the growth proved malignant. At first the patient refused, but later agreed, and went into the hospital for examination. To Dr. Mayer's surprise it was found to be not malignant, the patient was put on antisyphilitic treatment, and is living to-day without operation. Another patient, now under observation, sixty years of age, presented himself with so much dyspnea that a tracheotomy had to be performed immediately. As soon as his physical condition warrants, the operation which Dr. Richardson has described will be performed.

DR. D. B. DELAVAN, New York, said that he had seen Dr. Berens' patient both before and after operation, and the results are in every way admirable. With regard to the question of diagnosis, he recently had a case operated upon in which two thirds of the tumor-like mass, as large as the end of a thumb, was sent to the pathologist for examination, the remaining mass being removed later at the same operation. The first fragment was reported to be a practically typical papillomatous growth; later, when the same pathologist had time to examine the second portion removed, he reported it "typical epithelioma." In this case we have an illustration of a condition in which the part of the growth reached from the larynx by any possible instrument showed no signs of malignancy, so that the examination of a large fragment removed in that way was misleading. The remainder of the growth was removed on the basis of operation for benign growth, but it proved malignant. Unfortunately the patient did not survive.

DR. CHEVALIER JACKSON, Pittsburg, said that he had a very beautiful series of drawings taken from a month to seven years after a thyrotomy which illustrate the point made by Dr. Swain. The band assumes the form and function of the cord to such an extent that it is quite customary for men to inquire which side was operated on. Usually the cicatricial band is quite vascular, and four or five years after operation it requires very careful examination to determine the operated side, if the arytenoid has not been injured or fixed before operation.

DR. RICHARDSON, Washington, closing the discussion, said that the patient has simply a rather hoarse voice. As Dr. Jackson had said, a band of tissue is developing. When first seen a month after operation there was nothing, last November it was commencing to show, and the last time he was seen the band was showing quite decidedly, just in line with the opposite cord. In time it will probably develop more fully.

## XX. REPORT OF A CASE OF RECURRENT PAPILLOMA OF THE LARYNX, EXTENDING OVER THIRTY YEARS, DURING WHICH TWO THYROTOMIES WERE PERFORMED.

FRANCIS R. PACKARD, M.D., Philadelphia.

The patient first came under Dr. Packard's observation in 1904. He was then sixty-six years of age and had had laryngeal trouble for twenty-four years. He was a very intelligent Englishman and had been an auctioneer until it became impossible for him to use his voice. In 1883 he had come to America for the express purpose of having his laryngeal condition treated by the professor of laryngology of the University of Pennsylvania at that time, the late Dr. Carl Seiler. Dr. Seiler diagnosed the trouble as multiple papilloma of the larynx, and removed enormous portions of the growth. The patient went to New York in 1884, and was treated by many laryngologists, who continued removing masses from his larynx until July, 1885, when Dr. Gerster performed a thyrotomy and removed a large mass, which under the microscope proved to be papilloma. Dr. Packard removed masses of a similar character at numerous subsequent sittings. In February, 1905, Dr. Le Conte, at the Pennsylvania Hospital, divided the thyroid cartilage anteriorly once more and removed enormous masses, the microscopic examination showing once more nothing but benign papillomatous tissues. Since that time he has been very much better. At present he can talk quite distinctly, although his voice is very husky, but the larynx is free from any evidence of return of the growth. He is now seventy-two years of age, a strong man, and apparently perfectly healthy.

The interesting points in the case are: (1) The long time during which the patient has been under observation and throughout which intelligent treatment has been directed to the relief of the condition. (2) The fact that throughout that period, as far as can be known, there has been no change in the nature of the neoplasm. (3) The fact that this growth is so typical as to etiology, occurring in an auctioneer; as to growth and microscopic appearance; and, lastly, as showing no tendency, in spite of repeated operative interference and traumatism, to undergo any malignant degeneration.

DR. SAMUEL JOHNSTON, Baltimore, said that with papilloma of the larynx, especially in children, we get excellent results in many instances. He then cited a case of a child who came to him suffering great stridor, and with only a chink to breathe through, who was

successfully treated with applications of colloid of zinc, 10 gr. to the ounce, and 2 gr. of thyroid extract three times a day to increase its nutrition. In a very short time the child began to improve and in three months the papilloma had disappeared, the child had gained in weight, and the voice was completely restored. He has treated two other cases in adults, and his assistant has treated a child, with the same results. He hoped that others would give this treatment a trial.

Dr. Delavan said that the type of papilloma described by Dr. Packard, and the small not very active growth that Dr. Johnston had to deal with, are different diseases altogether, although histologically they may show the same appearance. Some years ago he had recommended alcohol for the type of growth mentioned by Dr. Johnston, and others employ other remedies, but there is a type which cannot be cured by such measures.

Dr. Charles W. Richardson, Washington, said that many of these growths reach apparently a certain stage of reproduction, and if we keep on at them until they reach that stage they cease. He had had a case which bears out Dr. Johnston's case. In this instance the growth extended from the anterior commissure almost to the arytenoid, and which was removed in four or five weeks by frequent applications of the sound. Another patient had a similar course to Dr. Packard's case. He was not quite so old, but came under observation some years ago, and the result has been very satisfactory.

Dr. J. P. Clark, Boston, said that one or two points in Dr. Packard's case were unique. He has never known a case of papillomata in adults which began in adult life. From the history given by Dr. Packard this papilloma apparently began at forty. In a series of cases which he had reported some years ago the cases all began in childhood. It is also unique that a papilloma of the larynx in an adult should show such a strong tendency to recurrence. In his experience they have yielded very quickly to removal. In regard to papilloma of the larynx in children, as he had pointed out some years ago before the association, they may disappear without doing anything. In papilloma of the larynx it is difficult to say whether any given treatment is the cause of the disappearance or not. When the papilloma gets ready to go, it goes, but until the activity which causes it is removed, it will not be relieved by anything that is done for it.

Dr. W. E. Casselberry, Chicago, said that he had seen a number of cases of papilloma which originated after adult life. He thought that the description of two varieties of this disease is inadequate — he would say ten or more varieties. They range all the way from the circumscribed narrow base pedunculated growth to the persistently recurring growth which fills the larynx. He has had under observation for many years a case of the permanent type which commenced after thirty-five years of age. The patient is now well; that is, he is performing all his duties on the bench with a good voice, but every month some fragments are removed from his throat. At the Medical Congress held in Washington in 1899 he had proposed the galvano-cautery for the destruction of the base of the papilloma in the larynx in adults, and he has been using it ever since very satisfactorily.

Dr. W. K. Simpson, New York, said that it is well known that papilloma in children or very young adults are susceptible to many types of treatment. He himself had followed Dr. Casselberry's treatment with the cautery with very good results, but the best result he ever obtained was in the case of a young woman with a very extensive papillomatous growth which recurred after every type of instrumentation. He then applied pure lactic acid. The recurrences ceased with perfect restoration of the vocal cord and voice. He feels that this is one of the most effective escharotics we have.

Dr. H. L. Swain, New Haven, said that we all like to hear end results in these cases, and told of two patients seen upon whose larynxes he had operated many years ago. One, an adult, seen twenty years ago, then aged thirty-five, had a quantity of papillomatous growth which did not recur very rapidly, but every three or four years a little one was removed here and there; then, thinking that instrumentation might be the cause of the recurrence, he desisted for ten years. When seen this winter two or three are still present, but she is apparently getting on all right. On the other, the growth became so great that a thyrotomy was done, the growth removed and the base burned out with the Paquelin cautery. The growth did not recur and the patient passed from observation for five or six years, but when examined this winter she has two or three small growths. In both cases it seems better to avoid instrumental interference if possible.

Dr. E. L. Shurley, Detroit, said that he had had several of these cases in the last fifteen years, and in all of them had performed tracheotomy and removed the growth as far as possible. One had a thyrotomy. All have recovered. Ordinarily putting the larynx at rest is sufficient for the recovery of these cases.

Dr. W. K. Simpson, New York, said that in an adult where the traumatism resulted from excessive use of the voice, putting the throat at rest would probably cure it, for then the cause was removed.

Dr. Shurley said that the same principle would seem to apply to all papilloma in adults. The invention of the bronchoscope and Dr. Jackson's instruments have revolutionized procedures along this line, but there is some danger of losing the use of the mirror.

Dr. Myles, New York, said that the case reported by Dr. Packard did not take children into consideration, and then cited the case of an only child sent by its parents to a general surgeon, who operated by splitting the larynx. The child died of pneumonia a week later; if a tracheotomy had been performed the growth would probably have fallen away. He also told of another case, a woman nearly fifty, from whose larynx and trachea he had at different times removed 164 papillomata. She had diffuse papillomatous degeneration of the vocal cords, ventricular bands, epiglottis and a considerable area over the thyrohyoid area extending into the trachea. He had succeeded in making her breathe and talk comfortably, and there are only a few small growths left. They recur every year to a certain extent, but after a seance she is comfortable again.

Dr. A. W. Watson, Philadelphia, said that he wished to add his testimony to Dr. Casselberry's in regard to the value of the electrocautery. He has never met a case of papilloma in adults that did not yield to the galvanocautery, even such as the one described by Dr. Packard.

Dr. Packard said that he had epitomized the means employed. The patient was very intelligent and had had all kinds of applications tried; he asked particularly not to have any intralaryngeal work done if it could be avoided, for the condition had recurred after every such procedure.

### SUPPLEMENTAL REPORT ON OPERATIONS ON MALIGNANT GROWTHS OF THE UPPER RESPIRATORY TRACT.

Dr. Price-Brown, Toronto.

Dr. Price-Brown said that he had reported on these cases last year, but now wished to report again. The first case, in which he had removed three fourths of

the septum, had had no recurrence. The other two were young men who lived outside of Toronto and returned to him to report at Christmas time. They were feeling perfectly well, but in each there was a return of the growth, and he repeated the former procedure, and has since treated them once a month, or twice if necessary. The treatment does not interfere with their work in any way, and there is no hemorrhage after leaving the office. He does not take sections, for he believes it would be injurious to do so. They have both recovered by constant care and attention, and by elimination of the growth. Eventually it is probable that the recurrence will cease. The case that he operated on nine years ago — it is now years since he was last operated — is perfectly well. These two young men are perfectly well so far as appearance and feeling are concerned, but the growths recur occasionally.

XXI. BLACK TONGUE — LINGUA NIGRA VILLOSA.

CHARLES H. KNIGHT, M.D., New York. Read by title.

The paper gave a brief review of the literature, showing conflicting views of etiology, together with report of a typical case nearly a year in duration, occurring in a man of middle age, and undergoing spontaneous cure on abstention from the use of tobacco for two weeks. There is no evidence of malignant tendency; subjective symptoms are trifling, and local treatment is of doubtful efficacy. The affection must be regarded as curious rather than important, and doubtless often escapes observation. There are now on record upward of one hundred and fifty cases, yet while the clinical history is sufficiently clear, the causative factors remain obscure.

## Book Review.

*Nursing in Diseases of the Eye, Ear, Nose and Throat.* By the Committee on Nurses of the Manhattan Eye, Ear, Nose and Throat Hospital. Philadelphia and London: W. B. Saunders Company. 1910.

The opening paragraph of the preface of this book reads: "In looking about for a book on nursing which would serve as a textbook for the nurses in the Training School of the Manhattan Eye, Ear, Nose and Throat Hospital, we were unable to find one which exactly suited our purpose." "We" means the committee of nurses. This committee, not finding what they wanted, collaborated and compiled the book under review. The collaborators are three surgeons, one from each department, two assistant surgeons, the attending physician to the hospital and the superintendent of nurses.

The book aims to give the fundamental and necessary facts which a nurse training for the care of eye, ear or throat cases should know. For instance, in the section devoted to the ear, the first chapter deals with anatomy and physiology; the second, with the examination of the ear, — the general method and the instruments employed; and the third and the succeeding chapters take up the diseases of the ear and the medical and surgical measures needed for their relief. The chapters dealing with the eye and the throat are arranged in the same methodical way. Throughout the book especial stress has been given to the instruments needed for dressings and operations. The lists of instruments — "layouts" — ought to be a great help to the nurse who wishes to attain the maximum of usefulness in surgical cases.

The first section of the book, styled "The General Part," seems to the reviewer the freshest and most interesting. There are ten chapters, which deal in order with the germ theory of disease, antiseptics, disinfection of rooms and clothing, sterilization, the preparation of the operating room, the duties of the nurse at operations, the nurse's duties in emergencies, the management of troublesome children, the ideal nurse and her conduct in the sick room, and, finally, the feeding and care of infants.

The chapter on the management of troublesome children is novel and very practical. The chapter which follows, the ideal nurse and her conduct, is something of a sermon, but one that should prove stimulating and useful. There is much good sense in it. For instance, nurses are reminded that their coming into the household means a great increase in expense, so that it behooves them to be considerate. They are reminded also that unless they are tactful their arrival may cause a speedy discontent among the servants. A further warning might be given along this line, namely, that a nurse should never go into the kitchen if it is possible to avoid it.

Speaking of the conduct of the ideal nurse reminds the reviewer that a paragraph, if not a whole chapter, could be written on the horror of feeding nurses. It is well known that a nurse is often shamefully imposed upon, but, on the other hand, so is the mistress of the household. Often the best of nurses are brutally impolite when they sit at table with the family. The feeding of a typhoid patient may be hard, but the feeding of a nurse is often harder. The stony stare with which the food on the table is investigated is but a mild form of this impoliteness. This might be borne, but it is enough to break the heart of any housekeeper to face day after day the bird-of-Paradise air so frequently assumed by the nurse at her meals, and the pecking at her food which goes with it. The amount of food wasted by such a nurse is no small matter. I have often wondered what the home diet of nurses of this stamp might be. Ten to one it is not half as good as the food they rudely sniff at in the homes of their patients. If every training school would supply its nurses with a diet list which the majority of its graduates would eat, a list which the mistress of the house could ask for and follow, the cares which come to the household when sickness and the trained nurse enter it would be reduced one half.

The reviewer knows whereof he speaks; but to return to the book under discussion or rather under review. The book is admirably fitted to accomplish its purpose. Practical points which make for efficiency are emphasized. It gives nurses what physicians wish them to know. The volume is well printed and aptly illustrated. Some of the illustrations of instruments, however, are too small and too indistinct.

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## MEDICAL AND HUMAN PROGRESS.

In the JOURNAL of Dec. 22, page 971, we printed a communication relative to an editorial in the issue of the JOURNAL for Dec. 8 on the "Report of the Massachusetts Tuberculosis Commission." Our correspondent takes particular exception to two things in this editorial: first, to our question as to the economic advisability of state subsidy for non-paying tuberculous patients; second, to our statement "that human progress is necessarily slow, that something must be left to natural processes which can be aided but not hastened." His objections, and the points upon which he makes them, seem of sufficient importance to deserve further consideration; and his opinions are in themselves of such weight as to carry even greater conviction than the arguments adduced in their support.

In regard to state subsidy, our correspondent makes the now familiar assertion that the actual saving of human life and efficiency by such a measure would far more than balance its cost, and that apart from all other considerations, it would, therefore, be a financial economy for the community. That every death from tuberculosis does cost a certain outlay in money is, of course, true, though this is not necessarily borne by the state; and the experience of Denmark and Sweden, cited by our correspondent, goes far to prove that it is really cheaper for the state to prevent tuberculosis than to take care of its victims after they have been infected by the disease. It still remains to be proved, however, that state subsidy is really the best and wisest method for such prevention. Though by no means positive that it is not so, we believe the question still sufficiently open to doubt, as a measure of expediency, to merit further discussion.

Our correspondent's second matter of comment results from a confusion of human progress and progress in scientific medicine. The latter has, indeed, been rapid and brilliant, and may be confidently expected to continue so; the former is much slower and more obscure, for it is dependent not on individual genius, but on the recognition and assent of all. It is often long before the discoveries of science are made effective by popular adoption. An example of this may be found in vaccination against smallpox, which, after more than a century of demonstrated usefulness, has still many bitter opponents, especially in this country. Another instance of this unreasoning popular prejudice against the application of medical truth has just come to hand in an article by Mr. B. O. Flower, in the current number of the *Twentieth Century Magazine*, entitled "The Truth about the Bubonic Plague Scare." This article declares that there never was a case of bubonic plague in San Francisco, assails the "arrogant insistence" of federal authorities as to its existence, and attacks the proposition for the establishment of a national health department as the work of "bureaucrats and political doctors." It should be noted that Mr. Flower is an enthusiastic advocate of Christian Science, whose flourishing growth in the United States is further evidence how far human progress is behind that of medical science.

Now it is unquestionably true that measures of sanitation and hygiene and popular education have greatly reduced the incidence and mortality of certain infectious diseases. That the extensive further enforcement of such measures will eliminate those diseases is at least open to doubt. In the first place, popular opinion is often opposed to such enforcement; in the second place, there is an irreducible minimum beyond which we can hardly hope to go by extension of sanitary prophylaxis. A single agent like smallpox vaccination, diphtheria antitoxin and possibly antityphoid inoculation does more to check preventable disease than all the sanitation in the world. General hygienic measures are well worth while, and their reasonable application is desirable; but they cannot be expected to eliminate the infectious diseases until human progress keeps better pace than at present with that of scientific medicine. Indeed, from the very constitution of human nature they cannot be expected to do so. Natural process in the eradication of the infections is the slow evolution of general immunity. Such process may be aided by prophylactic measures. The segregation of every tuberculate would limit the

risk of many persons, but it might not stop tuberculosis. For the attainment of that end there will probably also be necessary the natural development of an immune race, or the scientific discovery of some agent which is an actual and infallible cure for the disease.

These observations are not intended, any more than our previous editorial, as opposition to the plans proposed by the Tuberculosis Commission, which represent the mature judgment of experts and their laudable effort for the control of a great popular scourge which is worth fighting. They are merely suggestions that there are other aspects of that problem than those which have been emphasized by the commission, aspects which thoughtful persons should consider and weigh before committing themselves to the support of measures involving considerable expense and a debatable policy. We are appreciative of the comments in our correspondent's communication, which will be helpful in such consideration.

## THE CASE OF ANTITYPHOID INOCULATION.

IN last week's issue of the JOURNAL we published a communication relative to a previous editorial in which we commented on "the insidious dangers of typhoid fever and the seeming impossibility of its extermination by even the wisest sanitary provisions." Our correspondent justly objects to what he conceives as an implied disparagement of the value of the sanitary prophylaxis of typhoid, though in reality nothing was further from our intention than to make light of its importance. The fact remains, however, as our correspondent points out, that sanitation is often woefully inefficient, even in many highly civilized communities, and this inefficiency may jeopardize other communities whose standards are higher. The maintenance of perfect sanitation seems incompatible with human nature as at present constituted, and the best that sanitation has been able to accomplish is to reduce typhoid to a residual minimum. It is precisely that residue which antityphoid inoculation may help us to eliminate and thereby complete our conquest of the disease. Had all the cadets at Annapolis been inoculated, the recent epidemic would certainly have been much less in extent and severity and might have been entirely avoided. Reports from every reliable source unanimously emphasize the probably high protective value of antityphoid inoculation and the gratifyingly successful results of its application. In this issue of the JOURNAL, pages 1 to 8, our readers will find a valuable paper by Major F. F. Russell, of the United States Army Medical Corps, on "The Prevention and Treatment of Typhoid Fever with Antityphoid Vaccine." This article is followed by another and shorter article by Drs. Richardson and Spooner on "Antityphoid Inoculation as Introduced into Certain Training Schools for Nurses in Massachusetts." In this paper and in the latest monthly bulletin of the Massachusetts State Board of Health, the secretary, Dr. Mark W. Richardson, after presenting the statistics of a series of inoculations in ten Massachusetts hospitals, continues: "Our experience, therefore, covers 1,588 inoculations practised upon 405 individuals. As yet there have been no untoward results, and we believe that the inoculated individuals have acquired an increased resistance to typhoid infection which will last them for several years at least. We expect in the coming year to extend the influence of these inoculations, especially among nurses and others attendant upon the sick. Furthermore, we have strong faith that the procedure will, within a short time, find increasing favor with the general public, which, exposed as it is to many sources of infection, is in great need of specific protection."

The employment of so promising an agent in the fight against typhoid seems indicated by common sense and scientific reason, and we strongly advocate its extensive general adoption. That this will meet with vigorous objection on the part of a prejudiced public is unquestioned. That, however, does not vitiate its value. Nor does our advocacy of it mean that we should for a moment relax our efforts to secure and extend the provisions of sanitation. Both are needed in the conflict. How secure against smallpox should we be if we relied on quarantine and made no general use of vaccination? We heartily agree with our correspondent that we should "work for improved sanitation as a means of preventing typhoid," but we believe that we should also work with equal zeal for the more general use of that new and valuable agent of preventive medicine, — antityphoid inoculation.

## EUGENICS AND DIVORCE.

THE "doctrine and discipline of divorce" constitute a problem which vexed and perplexed mankind before the days of Milton and which has continued to do so ever since. So much has been written and said about it that further comment seems almost superfluous, yet divorce remains today one of the most serious questions of civilization, not so much in itself as on account of the

deeper considerations of ethics, justice, sociology and human frailty which it involves.

The increasing frequency of divorce is perhaps one of the aspects of this problem most frequently and familiarly commented upon. According to recently published vital statistics of Massachusetts for 1909, there were during that year in this state 29,002 marriages and 7,050 suits for divorce filed or pending. To be sure, decrees were granted in only 2,384 of these cases, but the figures indicate marital infelicity in nearly 25% of all marriages. Since 1890, 7,635 divorces have been granted to husbands and 18,688 to wives. In nearly 50% of these cases the cause was desertion, in about 20% infidelity, in about 16¾% cruelty, in about 12½% alcoholic intemperance. In only one county of Massachusetts were there no suits for divorce during 1909.

In England, the problem of divorce has assumed such importance that in June, 1910, its consideration was entrusted to a specially appointed Royal Commission, at whose sessions, terminating on Dec. 22 last, much interesting and instructive evidence was produced. Apparently in the opinion of this commission the solution of the problem rests in eugenics, that ubiquitous modern science in which many are now prone to place all the millenial hopes of humanity. Moreover, one of the experts, testifying before the commission, declared that eugenics is a department of preventive medicine, thereby bringing divorce within the category of diseases with which it becomes the duty of physicians to deal. Whether the responsibilities of the profession be not already great enough but that it must undertake this proposition also, and attempt the regeneration of mankind *en bloc*, remains to be determined, but at any rate this turn of the argument gives a medical aspect to the problem of divorce which merits at least theoretic consideration.

The specific recommendation made by the advocates of eugenics is the prevention of propagation among the unfit, particularly the insane, the tuberculous and the intemperate. This they propose to accomplish by the establishment of marriage registration bureaus, at which all persons "intending matrimony" must file certified statements of their personal health, habits and heredity, and undergo physical examination. Without approval by these bureaus no marriage licenses should be granted. Doubtless such a system, if established, might to some extent prevent propagation among the unfit, and lead to a certain physical improvement of the race. Whether it would operate as a check on divorce remains an open question, for the conditions which lead to domestic unhappiness and divorce seem in many instances more profound and dependent on subtler causes than could come under the jurisdiction of such a system. The crux of the whole matter lies in the essence of human nature. As Professor Geddes remarked in another connection: "What was decided by the prehistoric protozoa cannot be annulled by act of Parliament." The solution of the problem, if any there be, like the solution of most human difficulties, would seem to lie in education rather than in legislation. Meantime the possibilities of active eugenics, whether as bearing on divorce or on preventive medicine, deserve consideration by physicians and by other thinking persons, for they form a promising part of the unthreshed material of the times.

## LIABILITY OF MUNICIPALITIES FOR WATER POLLUTION.

It is reported from St. Paul, Minn., that the Supreme Court of Minnesota has recently rendered an important decision relative to the liability of municipalities for the death of citizens from disease contracted by drinking polluted city water. Following a recent epidemic of typhoid fever at Mankato, Minn., which the Minnesota State Board of Health determined to be due to the pollution of the city water supply by sewage, the widows of two men who died of the disease brought suits for damages against the city on the ground that their death was due to the negligence of city officials. The city demurred, and this demurrer was appealed to the Supreme Court, which has decided that such suits can be maintained against a city and that the city is liable, if damages can be proved. This decision seems of considerable importance as a precedent, and suggests possibilities of much litigation against municipalities for alleged negligence in the discharge of government functions from which damage to individuals may directly or indirectly have resulted. It is tantamount to making everybody legally responsible as his brother's keeper.

## RESPONSIBILITY OF PHYSICIANS FOR VITAL STATISTICS.

The importance of reliable vital statistics as a basis not only for scientific research, but also for the hygienic and sanitary measures of preventive medicine and for many sociologic reforms, is self evident. The frequent unreliability of vital statistics, even in enlightened communities, is

also unfortunately well known, and it must be confessed that the fault for this often lies with physicians, whose failure to report births and deaths with promptness and accuracy of detail vitiates otherwise valuable data. Uniformity of method in such reports and records over large registration areas is likewise an essential. The United States Census Bureau has for some time advocated the extension of such a uniform system throughout the country, and in pursuance of this policy has issued for physicians a pocket leaflet of reference to the International List of Causes of Death. In a recently published letter transmitting this leaflet to the secretary of the Department of Commerce and Labor, the director of the Census Bureau makes pertinent comment thereon, and on the general subject of vital statistics which seems to deserve repetition. He writes:

"It seems to me that there is almost nothing more important in the entire field of statistics than vital statistics, because of their direct bearing upon the health and consequent welfare of the people. It certainly is both strange and shameful that the United States should be so far behind the other leading countries of the world in the registration of deaths, and even more so in the registration of births. I hope for the cordial interest and support of the entire medical profession of the United States in making our statistics of causes of death, as received from the registration area, of the utmost accuracy, and in helping to extend the area of complete registration both for births and deaths until the vital statistics of the United States shall be second in completeness and usefulness to those of no other country.

"The physician's responsibility is usually confined to the correct statement of the cause of death, but he may in some instances fill out the entire certificate, or he may note errors in the statement of personal particulars, the correction of which will be of service to statistical accuracy, as well as insuring more truthful legal records. Hence his interest is solicited in the completeness and correctness in all respects of all certificates passing through his hands, and more especially in the correct statement of sex, color, marital condition, age, occupation, birthplace, birthplace of father, birthplace of mother, and length of residence, when the latter is required.

"Age is of special importance, and as a check on the accuracy of the statement the date of birth is also required. For infants under one day old, state the hours, or even the minutes if less than one hour old. This is necessary in order that stillbirths may be distinguished with absolute precision from deaths of children born alive.

"Precise statement of occupation is very important, so that the relative healthfulness of various pursuits can be known. The statement should include: (*a*) Trade, profession or particular kind of work and (*b*) general nature of industry, business or establishment in which employed (or employer)."

That there are states in the Union which have no registration of vital statistics, and others in which that registration is absolutely inadequate, emphasizes the importance of these comments. Their moral should be taken to heart by every physician in the country, for with physicians rests the ultimate responsibility for vital statistics.

## MEDICAL NOTES.

YELLOW FEVER IN NICARAGUA. — It is reported from Washington, D. C., that a fatal case of yellow fever occurred last week at Managua, Nicaragua.

OPIUM SMUGGLING IN THE PHILIPPINES. — Report from Manila, P. I., states that on Dec. 29, 1910, two merchants of that city were sentenced by the Supreme Court to two years' imprisonment and a large fine for opium smuggling. Both had served a previous sentence for a similar offense.

BUBONIC PLAGUE IN MANCHURIA. — Report from Harbin, Manchuria, states that the epidemic of bubonic plague is extending in that country. In Fudziasian, a Chinese suburb of Harbin, there are said to have been 98 new cases and 28 deaths of the disease on Dec. 25, 1910; and on Dec. 26, 68 new cases and 17 deaths.

CHOLERA RIOTS IN MADEIRA. — Report from Lisbon states that the epidemic of Asiatic cholera continues to prevail in Madeira, and that there is vigorous opposition on the part of the native inhabitants to all sanitary measures to prevent its spread. The Twenty-Seventh Portuguese Regiment of Infantry is now stationed in the island to check the serious rioting which has occurred as a result of this popular prejudice.

IMPURE FOODS AND DRUGS IN COLORADO. — Massachusetts is not the only state troubled by impure foods and drugs. It is reported that the Colorado State Board of Health has found 57 firms, mostly in Denver, selling adulterated and misbranded sausages, and adulterated ice cream. One brand of headache wafer, "guaranteed to contain no harmful substances," was found on examination by the board to contain 5 gr. of acetanilid.

Death of a Leper. — It is reported from Aiken, S. C., that Miss Mary V. Kirk, who has been under quarantine at her home in that city for over two years with leprosy, died there on Dec. 27, 1910. She is said to have contracted the disease nineteen years ago while in Brazil as a missionary.

New Hospital in Chicago. — On Dec. 30, 1910, the new Iroquois Memorial Emergency Hospital in Chicago, erected to the memory of those who lost their lives at the Iroquois Theater fire on Dec. 30, 1903, was formally presented to the city. It is a four-story fireproof building of twenty rooms.

A Living Centenarian. — George H. Hawes, of Saugus, Mass., who is said to have been born on Dec. 26, 1810, at Halifax, N. S., celebrated last week the supposed centennial anniversary of his birth. He came to Saugus as a child, and was married there in 1850. He has been a widower for the past twenty years. His health is excellent, and he is said to be able to read a newspaper without glasses.

Horse Flesh as Human Food in Germany. — The extent to which horse flesh is used on the continent of Europe as human food is not generally realized in America. It is reported from Germany that the city of Berlin has recently appropriated the equivalent of $89,000 for the construction of a new abattoir especially for the sanitary preparation of horse flesh. It is stated that 12,500 horses are annually slaughtered in Berlin for this purpose.

Pure Milk in Turkey. — The advent of the new Turks has apparently led to many salutary reforms in the Ottoman Empire. A report from the United States consul at Salonica describes the establishment in that city of an admirable system for the municipal inspection of milk, whereby the contents of every can is daily tested and the can then officially sealed until its delivery to the consumer.

Bequests to London Hospitals. — Report from London states that the will of the late Henry Silver of that city, formerly on the editorial staff of *Punch*, who died on Dec. 3, 1910, makes the following bequests to London medical charities: To the Royal Free Hospital, £50,000; to the Royal Victoria Hospital for Children, Chelsea, £25,000; to the Great Ormond Street Hospital for Children, £25,000; to the West London Workshops for the Blind, £2,000. It is significant to note that over one fifth of Mr. Silver's large estate is consumed by legacy and inheritance taxes.

Poliomyelitis in Rhode Island. — The Rhode Island State Board of Health has just published statistics of the epidemic of poliomyelitis which prevailed in that state during the past spring and summer. Since March, 1910, there have been reported in Rhode Island 206 cases of the disease, 113 in males, 93 in females. The ages of the patients ranged from one month to twenty-four years. There were 26 fatal cases, of which the majority were between one and five years of age.

Medical Inspection of Schools in England. — A recently published report of the chief medical officer of the British Board of Education states that in England there are at present 986 medical inspectors of schools, of whom 73 are women. Of 6,000,000 school children in the public elementary schools of England and Wales, about 30% have bad teeth, 10% have defects of vision, 8% have enlarged tonsils or adenoids, 2% have suppurative otitis media, 1% have tuberculosis and 1% ringworm. Defective vision, especially myopia, is said to be commonest among Hebrew children.

Determination of Deterioration in Maize with Reference to Pellagra. — In a recently published bulletin (No. 199) of the Bureau of Plant Industry of the United States Department of Agriculture, Mr. Otis F. Black and Dr. Carl L. Alsberg present the results of their "critical study of the methods of detecting products of deterioration in corn and corn meal," which they regard "as a necessary preliminary step in the investigation of the alleged relation between spoiled corn and pellagra." The importance of determining this relation prior to any attempt to eradicate the disease is obvious, and the researches of the authors into the chemical and biologic methods of testing corn and corn products should be of value not only in this respect, but to hygienists, economists and agriculturists in general.

American Association for the Advancement of Science. — The sixty-second annual convention of the American Association for the Advancement of Science was held last week in Minneapolis, Minn. Numerous papers of interest and value were presented before the sessions of the several sections. In his address as vice-president of the section on physiology and experimental medicine, Dr. Charles S. Minot, of Boston, discussing

"The Method of Science," commented particularly on the pre-eminence of the sense of vision as the supreme human instrument of research, and on the surpassing excellence of English as a scientific language. Dr. Burton R. Rogers, in a paper on "The Control and Eradication of Animal Tuberculosis," pointed out that one cause of the present high cost of meats is the expense involved in their inspection and in the destruction of diseased animals.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Jan. 3, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 62, scarlatina 36, typhoid fever 11, measles 58, smallpox 0, tuberculosis 55.

The death-rate of the reported deaths for the week ending Jan. 3, 1911, was 16.35.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, Dec. 31, 1910, was 232, against 261 the corresponding week of last year, showing a decrease of 29 deaths, and making the death-rate for the week, 17.96. Of this number 116 were males and 116 were females; 228 were white and 4 colored; 139 were born in the United States, 92 in foreign countries and 1 unknown; 55 were of American parentage, 151 of foreign parentage and 26 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 51 cases and 4 deaths; scarlatina, 33 cases and 1 death; typhoid fever, 9 cases and 0 deaths; measles, 55 cases and 0 deaths; tuberculosis, 52 cases and 22 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 46, whooping cough 2, heart disease 32, bronchitis 3. There were 9 deaths from violent causes. The number of children who died under one year was 26; the number under five years, 43. The number of persons who died over sixty years of age was 74. The deaths in public institutions were 81. Cerebrospinal meningitis, 2 cases. Acute anterior poliomyelitis, 1 case.

Of the above infectious diseases the following were non-residents: Consumption, 1 case. Scarlet fever, 4 cases.

Deducting deaths of non-residents, the total is 208 and the death-rate is then 16.10.

BEQUEST TO THE DEACONESS HOSPITAL. — Among other charitable bequests in the will of the late Lucy A. Sanger, of Peabody, Mass, filed for probate at Salem, Mass., last week, is one of $300 to the New England Deaconess Home for hospital work.

PENALTY FOR FAILURE TO REPORT A NOTIFIABLE DISEASE. — For failure to report to the Boston Board of Health a case of ophthalmia neonatorum, a physician of this city was last week fined $50 before the central municipal court. The sentence, however, was suspended and the defendant placed on probation.

MEETINGS OF SCIENTIFIC SOCIETIES AT NEW HAVEN. — On Dec. 28, 29 and 30 of last week were held in New Haven, Conn., the annual meetings of the American Society of Biological Chemists, the American Physiological Society and the American Pharmacological Society. A total of over one hundred members were present. There were both individual and joint meetings of the several societies.

NEW OFFICERS OF THE MILK AND BABY HYGIENE ASSOCIATION. — At a recent meeting of the Boston Milk and Baby Hygiene Association, the following officers were elected for the ensuing year: President, Dr. Charles W. Eliot; vice-presidents, Dr. Milton J. Rosenau, Mr. Horatio A. Lamb and Mrs. Charlotte Barrell Ware; secretary, Dr. Walter B. Cannon; treasurer, Mr. Arthur H. Brooks. The association is now maintaining in Boston nine milk stations, which not only supply milk at a nominal cost, but conduct an extensive and valuable work in the supervision of the feeding and the general health of babies, and in the education of mothers in their care.

TWO CENTENARIANS. — Frank King, who died of cerebral hemorrhage at Grafton, Mass., on Dec. 29, 1910, is said to have been born on Dec. 5, 1806, in Quebec, Canada. He was twice married, and had 31 children, 18 by his first wife, 13 by the second. He also had 26 grandchildren and 26 great-grandchildren. His life displayed a prolific vigor reminiscent of Augustus the Strong.

Mrs. Catharine Cuddihy, who died at Northampton, Mass., on Dec. 31, 1910, is said to have been born in 1803 in Ireland. She came to Northampton in 1835. She was a widow.

CONVICTIONS FOR ILLEGAL SALE OF MILK AND DRUGS. — Before the South Boston municipal court last week a milk dealer of Charlestown, Mass., was fined $100 for having in his possession, on Nov. 29, 1910, with intent to sell, skimmed milk not marked as such.

Before the Boston central municipal court last week, a clerk from a drug store in this city was fined $50, on two counts, for illegal sale of morphine. Another was fined a like amount for illegal sale of cocaine.

Before the Dedham (Mass.) police court last week, a dealer from Norwood, Mass., was fined $5 for illegal sale of cigarettes to a minor; and another dealer from the same town was also fined $5 for failure to post properly, as required by law, the notice relative to the sale of tobacco to persons under legal age.

Report of Massachusetts State Board of Pharmacy. — The twenty-fifth annual report of the Massachusetts State Board of Pharmacy, recently published, shows that during the past year 27 new drug stores have been established in the state and 16 discontinued, a net gain of 11. Of 495 candidates examined during this time, 111 were granted certificates as registered pharmacists, 143 as assistant pharmacists, and 241, nearly 50% were rejected. The report points out that, as indicated by this high percentage of rejections, there is great deficiency among many of the candidates, and suggests, though it does not definitely recommend, that it would be advisable to require that such candidates must hold, as a prerequisite to entitle them to examination, a diploma from some recognized school of pharmacy as evidence that they have had a suitable training in the science and art of pharmacology.

A New State Psychopathic Hospital. — Construction has begun upon the new State Psychopathic Hospital on Fenwood Road in the Longwood district. The hospital will contain one hundred beds and will receive, classify, and treat the acute insane of the Boston metropolitan district. The institution is non-custodial in character and recalls in general plan the modern general hospital, emphasizing the modern conception of insanity as sickness. Space has been provided for an out-patient and social service department to perform the important work of handling mild and incipient cases, and particularly children, that may be referred to the hospital from neighboring institutions. Dr. E. E. Southard has been appointed director. The institution will probably open in 1912.

### NEW YORK.

Bequests. — By the will of the late George L. Fox, a well-known Brooklyn lawyer, several hundred thousand dollars are bequeathed to charities in Brooklyn. The Eastern District Hospital and Dispensary is to receive $100,000, and among the other institutions favored are the following: St. Catharine's, St. Mary's, the German and the Jewish hospitals, each $25,000, and the Brooklyn Hospital, $20,000. Twenty thousand dollars is also left to St. John's Hospital, Long Island City, and $10,000 to the New York Ophthalmic and Aural Institute.

Among numerous charitable bequests in the will of the late Morris J. Blueu, of New York, are $2,000 each to the Hospital for Deformities and Joint Diseases, New York, and the National Jewish Hospital for Consumptives at Denver.

Death-Rate. — The death-rate in the city for 1910, it is announced, was the lowest of any year in the records of the Health Department. The rate was 15.98, as against 16 in 1909.

A Chinese Leper Set Free. — A Chinese leper who has been kept for some time at the tuberculosis hospital, Passaic, N. J., has now been set free by the Passaic Board of Health and allowed to return to his laundry business. City Sanitarian Nelson Elliott advised the health board that in his opinion leprosy is not communicable in this climate.

A Tuberculosis Hospital for Employees of the Metropolitan Life Insurance Company. — Approval has been given by the State Commissioner of Health and the local health officer, Dr. J. S. White, to the application of the Metropolitan Life Insurance Company of New York for the establishment at Mount McGregor, Saratoga County, of a hospital for the treatment of its employees affected with tuberculosis. The hospital was opposed by residents of Saratoga Springs, who contended that it would injure that village as a summer resort. In the course of their opinion the health officers say: "The most serious objection that is urged is the possible damage to the property interests of Saratoga Springs and to the mineral springs. It is easy to dispose of the sewage from such an institution, and any possible contamination of any waters can be prevented. Hospitals for the treatment of tuberculosis must be established in the rural districts. Practically every county in the state is considering the construction of one. The educational measures which are being carried on in regard to this disease will soon drive from people's minds the fear which is based on ignorance." The site selected for the institution is eight miles from Saratoga Springs.

SANITARY CONDITION OF SUMMER RESORTS. — During the past season the work of inspecting the sanitary condition of summer resorts was actively carried on by the State Department of Health. This year the work undertaken by the engineering divison of the department has consisted to a considerable extent in the reinspection of resorts inspected in previous years and at which unsanitary conditions were found and made the subject of letters addressed to the proprietors. Those reinspections, covering some 260 resorts, were completed for the Adirondack, Catskill and Finger Lakes districts, and, in addition, 170 original inspections were made in these and in the St. Lawrence and Champlain districts. In sixteen out of forty-three resorts with faulty conditions inspected in 1908 and reinspected in 1909 it was found that in five the unsanitary conditions had been fully corrected and that at seven improvements were under way which will remove the grounds for criticism, while at four no steps had been taken to correct the conditions. These were the Raquette House, Raquette Lake; the Saranac Club, Upper Saranac Lake; the Lake View House, Blue Mountain Lake, and the Cascade Lakes Hotel, Cascadeville.

"THE TEN COMMANDMENTS FOR HANDLING GARBAGE WITHOUT NUISANCE." — One of the addresses at the tenth annual conference of sanitary officers of the state of New York, recently held in Buffalo, was by Dr. P. M. Hall, health commissioner of Minneapolis, who announced as his title, "The Ten Commandments for Handling Garbage without Nuisance." In the course of it he stated that for the last three and a half years the city of Minneapolis has been handling garbage thus without nuisance at the can, in the wagon, upon the street or at the disposal plant. Before being placed in the can, which has an overlapping, self-locking cover, the garbage is drained of moisture and wrapped in paper (such as is brought by the butcher, the grocer and the baker with their wares). In this way it is so reduced in bulk and the process of putrefaction is so retarded that collections of once a week are often sufficient, even in summer — a great saving in the cost of collection. The garbage wagon-box is so constructed that it can be lifted off the truck and the load is dumped directly into the hopper at the disposal works. Through the burning of the garbage the city produces enough steam to operate all of its machinery and to heat and light the group of workhouse buildings, the superintendent's house, the tuberculosis hospital and two greenhouses. It is the intention of the authorities to place near the crematory all the hospitals for contagious diseases, so that they may be lighted and heated in the same way.

## Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

DEC. 24, 1910.

1. *ARNOLD, H. D. *Importance of a Low Protein Diet in Chronic Nephritis.*
2. *DEAVER, H. C. *Appendicitis in Childhood, with a Report on Five Hundred Cases.*
3. MEAD, K. C. *Persistent Patency of the Ductus Arteriosus, with Stenosis of the Isthmus of the Aorta.*
4. LAMB, R. S. *Simplified Operation for Chalazion.*
5. CAFFREY, A. J. *Sodium Cacodylate in Syphilis.*
6. LEWIS, D. D. *Trapezius Transplantation in the Treatment of Deltoid Paralysis.*
7. HUNTLEY, V. F. *Congenital Dislocation of the Shoulder-Joint.*
8. SUTTON, R. L. *Sporotrichosis in America.*
9. MCRAE, F. W. *Conservative Surgery of the Pelvic Organs and the Lower Abdominal Walls.*
10. HAMILL, S. M., AND BLADSPAN, K. D. *Diagnosis and Treatment of Chronic Intestinal Indigestion in Children.*
11. HAGGARD, W. D. *Nitrous Oxide and Oxygen Anesthesia.*
12. TORRANCE, G. *Anesthesia in Traumatic Surgery.*
13. *WOOD, H. J. *The Comparative Danger of Ethyl Chloride as an Anesthetic.*
14. PETTIT, R. T. *Prevention of Hemorrhage in Pulmonary Tuberculosis by the Administration of Autogenous Vaccines.*
15. LEWIS, J. S. *Tincture of Iodine for the Umbilical Cord.*
16. SHEAFF, P. A. *A Simple Method for Measurement of Blood Cells.*

1. Arnold believes that in the severer or advanced cases of chronic nephritis the protein food should be limited to 50 gm. daily. Ninety gm. should be the limit in any case. His objection to the exclusive milk diet lies in the fact that if sufficient nutriment be supplied an excess of protein must be taken. It would require 3,000 ccm. of milk to supply the proper number of calories, and this amount of milk would contain 120 gm. of protein, which is much in excess of the maximum amount desirable for such cases.

2. Deaver states that appendicitis in children occurs with increasing frequency from birth to puberty, and is more common in males. It runs a rapid and severe course in children more often than in adults. Infantile appendicitis is more frequent than is generally believed. All cases of abdominal troubles in children should be regarded as appendicitis until proven otherwise. If the case is operated within the first twenty-four hours the mortality is practically *nil*. Operation is even more suitable for children than for adults. The Fowler position must not be maintained for more than thirty-six hours in drainage cases, lest intestinal obstruction occur. In presence of numerous adhesions in these obstruction cases ileocolostomy is the best procedure.

13. Wood condemns the freedom with which ethyl chloride is being used by inexperienced persons, with the idea that it is as safe as nitrous oxide. He believes that its wholesale use by dentists is nothing less than criminal. It is two hundred times as dangerous as gas. [E. H. R.]

THE ARCHIVES OF INTERNAL MEDICINE.

DECEMBER, 1910.

1. WENTWORTH, A. H. *The Estimation of Chlorides in the Stomach Contents from Normal and from Atrophic Infants.*
2. *SWIFT, H. F. *The Effect of Treatment on the Wassermann Reaction.*

3. SCHLOSS, O. M. *The Normal Percentages of the Different Varieties of Leucocytes in Infants and Children.*
4. BREM, W. V. *Studies of Malaria in Panama. I. Clinical Studies of Malaria in the White Race.*
5. HERRICK, W. W. *Pernicious Anemia Mistaken for Amebic Ulcer Colitis, with Observations on the Ipecac Treatment.*
6. *EINHORN, M., AND ROSENBLOOM, J. *A Study of the Duodenal Contents in Man.*
7. *AUSTIN, R. S., AND FROTHINGHAM, C., JR. *A Study of Human and Animal Typhoid Agglutinins.*
8. HAMMAN, L., AND WOLMAN, S. *The Cutaneous and Conjunctival Tuberculin Tests in the Diagnosis of Pulmonary Tuberculosis. Second Report.*
9. WILLIAMS, H. V. *An Histological Study of the Sweat-Glands in Cases of Chronic Nephritis.*
10. GORDON, A. *Lenticular Zone and Anarthria.*
11. *BASS, C. C., AND WATKINS, J. A. *A Quick Macroscopic Typhoid Agglutination Test.*

2. Swift's observations, which are not of very great extent, show a certain parallelism between clinical symptoms, efficiency of treatment and intensity of the Wassermann reaction. They point to injections as the most efficient method of administering mercury, and seem to show that the Wassermann reaction is the best guide to the length and severity of treatment required in each case.

6. This paper simply describes the apparatus and method used in obtaining duodenal contents, and gives some interesting tables which show the effect upon the quantity and activity of the duodenal juices of certain foods and drugs.

7. Austin and Frothingham, by injecting first dead, then live, typhoid bacilli into rabbits, developed in the rabbit's blood a power to agglutinate typhoid bacilli in a dilution of 1 to 20,000. The serum from these rabbits, if injected intravenously into other rabbits to the amount of 1 ccm. for every 750 gm. weight, conferred within a few hours a transitory agglutinating power in a dilution of 1 to 300 or 400, which is considerably higher than the agglutinating power usually acquired by human beings during the disease. Although this power to agglutinate so actively lasts only a few hours, it is suggested by the writers that in typhoid fever intravenous doses of serum, given every few hours, may confer so great an agglutinating power that material benefit will result.

11. Bass and Watkins describe a test to supplant the Widal reaction which, if it is proved accurate, must be universally adopted. A permanent solution of dead bacilli in weak liquor formaldehyde and 1.7% salt solution is used. One quarter of a drop of blood is mixed on a slide with one drop of water until it is dissolved. To this is added one drop of the standardized bacterial suspension, and the slide is gently agitated for two minutes. Within this time, if the blood possesses the power of agglutination, a "mealy grayish sediment" appears. If the test is negative, the solution remains clear. The authors base their claims for accuracy on "more than 100" comparisons with the Widal reaction and more than a year's clinical experience. [G. G. S.]

## BRITISH MEDICAL JOURNAL.

### DEC. 3, 1910.

1. RUSSELL, A. W. *Presidential Address on Prophylaxis in Obstetrics.*
2. *SHAW, H. B. *An Address on the Treatment of Hypertension based upon the Consideration of the Cause.*
3. ECKENSTEIN, K. *The Estimation of Blood Pressure by Means of the Sphygmo-oscillometer.*
4. *FRENCH, H. C. *The Control of Venereal Diseases at Their Source in Civil Communities.*
5. JOHNSON, A. E. *A Note on the Combined Use of Spinal and General Anesthesia.*
6. WILSON, H. *Thyroid Extract in Rheumatoid Arthritis.*
7. STEVENSON, E. S. *A Case of Intestinal Reflex.*
8. BOYCE, R. W. *Proof of the Endemic Origin of Yellow Fever in West Africa.*
9. JAMIESON, J. G. S., AND LAUDER, J. M. *Case of Fatal Trichocephaliasis in a Child.*

2. Shaw, in a general way, discusses high blood pressure and its causes. He describes the use of the instrument to determine the pressure and urges frequent examinations rather than dependence on one observation. He goes over the theories of the causes of hypertension, mechanical and clinical, and briefly discusses the treatment.

4. French discusses the present deplorable lack of control of venereal disease in England, and suggests certain remedies for this state of affairs, particularly that of making such diseases notifiable. He believes that England, as far as the control of prostitution is concerned, is fifty years behind the continent of Europe. [J. B. H.]

## THE PRACTITIONER.

### NOVEMBER, 1910.

1. *CROOM, H. *Pyometra.*
2. *LANE, W. A. *The Use of Plates and Screws in the Operative Treatment of Fractures.*
3. MURRELL, W. *Some Points in the Modern Treatment of Rheumatism.*
4. *NICOLL, J. H. *Congenital Hypertrophic Stenosis of the Pylorus, with Special Reference to Its Treatment.*
5. MCDONAGH, J. E. R. *The Etiology, Treatment and Pathology of Venereal Diseases as We see Them Today, with Special Reference to "606."*
6. *ADAMS, J. E. *The Clinical Aspect of Intussusception.*
7. HURRY, J. B. *Vicious Circles associated with Diseases of the Eyes.*
8. KEAY, J. W. *A Short Note on the Treatment of Vomiting following Chloroform Anesthesia, including the Use of Adrenalin.*
9. BARTON, G. A. H. *The Open Method of Ether Administration, with Some Modifications.*
10. MULLOY, D. *The State Prevention of Tuberculosis.*
11. HOWELL, A. *Primary Diphtheria of External Urinary Meatus.*
12. MATTHEWS, H. *Pulmonary Edema and Death.*

1. Croom classifies pyometra (1) as it occurs in children; (2) in virgins, (*a*) apart from hematometra and (*b*) resulting from hematometra; (3) pyometra from acquired atresia after development of catamenia; (4) from cancer; and (5) from senile endometritis. He discusses these various forms of pus in the uterine cavity as to etiology, diagnosis, prognosis and treatment.

2. Lane believes that the guide to treating fractures by operative interference or by the ordinary methods of splints is whether or not it is of primary importance to restore the fractured bone or bones to their normal form. Absolute asepsis is necessary to success in the operative treatment. He describes the technic of his method with diagrams and illustrations of instruments. He discusses in detail this method of treating fractures about the ankle-joint, fractures of the tibia and fibula, the patella, femur, and of the upper extremity.

4. Nicoll discusses the treatment of hypertrophic stenosis of the pylorus in infancy with special reference to nine cases of his own. He goes into the details of dietetic and surgical procedures. The three essentials to success in treatment are (1) a skilled surgeon who does not take more than thirty minutes to perform a posterior gastro-enterostomy; (2) a family physician who is alive to the fact that there are cases of this kind only early surgical interference can cure; and (3) a good nurse.

6. Adams analyzes one hundred consecutive cases of intussusception, especially from the clinical point of view. He discusses the length of history of the trouble, age, seasonal incidence, preceding irregularity of the bowels, anatomical abnormalities and injury. As to symptoms, pain was the most constant, with vomiting next; he discusses the frequency of passage of blood per anum, constipation and diarrhea, abdominal distention, rigidity, tumor and its nature. In 27 cases the apex of intussusception was felt per rectum. He gives the details of the operative treatment in this series. Celiotomy and reduction by manipulation was done in 76 cases, with 53 recoveries and 23 deaths. [J. B. H.]

## EDINBURGH MEDICAL JOURNAL.

### NOVEMBER, 1910.

1. *MACEWAN, D. *Bier's Treatment by Venous Hyperemia.*

2. *HEARD, J. D. *The Significance of Transient Cerebral Crises and Seizures, as Occurring in Arteriosclerotics.*
3. *FOGGIE, W. E. *Congenital Dextrocardia. Cor Triloculare Biventriculare.*
4. COMRIE, J. D., AND FRASER, J. S. *The Frequency of Sphenoidal Sinus Suppuration.*
5. LAWRENCE, H. R. *Scopolamine-Morphine as an Obstetric Anesthetic.*

1. MacEwan summarizes his opinions as to the value and use of the Bier hyperemic treatment as follows: (*a*) In closed tuberculosis venous congestion is limited and uncertain in its effects and may do harm. In open tuberculosis it is often of benefit. (*b*) In circumscribed inflammation, boils, carbuncles, etc., it acts well, especially if the suction method is used. (*c*) ) It acts less favorably in spreading inflammation. (*d*) It gives good results in gonorrheal arthritis, but should be used with caution if there is pus in the joints. (*e*) It is contra-indicated in erysipelas and is of uncertain value in osteomyelitis. (*f*) It acts beneficially in infected wounds.

2. Heard gives the details of four cases of arteriosclerosis in which transient cerebral crises and seizures were frequent and then gives an interesting and careful discussion of this subject as to the local pathology, etiology, diagnosis and treatment, with special reference to the work of others along these lines. There is a full bibliography.

3. Foggie presents a case of congenital dextrocardia and then discusses this interesting condition as to the heart defect which was present and the heart displacement. He mentions the other cases of cor triloculare which have been reported. As to the cardiac displacement, he gives the details of the various extrinsic causes of this condition, such as changes in the lung, diaphragmatic herniæ and antenatal inflammatory conditions. These he discusses. The second group of cases of this kind are due to intrinsic causes and are cases of true congenital dextrocardia. He gives a table of forty-six cases of true congenital dextrocardia which he has collected from the literature. He gives a long and complete list of references. [J. B. H.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 48.

DEC. 1, 1910.

1. DIECK, W. *General Treatment of Diseases of the Teeth.*
2. WALLENBERG, A., AND MARBURG, O. *Recent Advances in the Topographical Diagnosis of Diseases of the Pons and Oblongata.*
3. PLAUT, H. C. *Technical and Biological Experiences with "606."*
4. KLOSE, E. *The Tubercular Reaction of v. Pirquet.*
5. BÄHR, F. *Diseases of the Tendons.*
6. KRAEMER, F. *A Case of Abscess about the Bladder, with a Peculiar Method of Healing.*
7. STUHL, C. *Circumcision Treatment of Phimosis in Children.*
8. SCHOLZ, F. *The Oxygen Bath; the Manner in which it Works and Its Therapeutic Use.*
9. *FICKLER, A. *Hydropyrin: A New Soluble Salicylate Preparation.*
10. KLEIN, W. *The Subcutaneous Effect of Salicylic Acid on Rheumatic Affections.*
11. ZERNIK. *New Points in Medicine and the Specialties.*

9. Fickler is reporting on a new compound of salicylic acid which is soluble in water. It is the sodium salt of aspirin, with the following formula:

$$C_6H_4 < \begin{matrix} O \cdot CO \cdot CH_3 \\ COON \end{matrix}$$

It has the advantage over aspirin of being soluble in water. He has used it in 58 cases with good results. Its action is like that of the other salicylates in that it reduces fever, is specific for acute articular rheumatism, has an analgesic action and causes sweating and diuresis. The only poisonous effects were in 4 cases, and those were such as might occur with any salicylic acid salt, namely, disturbance of digestion and ringing in the ears. [C. F., JR.]

ARCHIV FÜR KLINISCHE CHIRURGIE.

VOL. 93. PART 3.

1. *KRAFT, L. *Observations on the Treatment of Severe Gastric Hemorrhage.*
2. MAGULA, M. *The Operative Treatment of Stab Wounds of the Diaphragm.*
3. *BAYER, C. *A Report of Further Observations on Stretching the Prostate in Hypertrophy.*
4. HERTLE, J. *Results of Resections of the Tendon of Achilles in Severe Flatfoot after the Method of Nicoladoni.*
5. GÖBELL, R. *The Process of Healing in Wounds of the Heart and after Resection of the Heart Wall. An Experimental Study.*
6. WOLKOWITSCH, N. *Rhinoplastics.*
7. HAIM, E. *The Pathogenesis of Rupture of the Stomach or Intestines without Perforation of the Abdominal Wall.*
8. DENK, W. *The Pathology and Cure of Ruptures of the Anterior Abdominal Wall.*
9. VON FRISCH, O. *The Treatment of Fresh Fracture of the Diaphysis.*
10. CLAIRMONT, P. *A Plea for the Operative Reduction of Fractures below the Shoulder and in the Forearm.*
11. BERGEL, S. *Callus Formation with Fibrin.*
12. MIYAKI, H. *Extensive Intestinal Resection, with Brief Remarks on the Normal Length of the Jejuno-Ileum in the Living.*
13. BOLOGNESI, G. *Endothelioma of the Submaxillary Salivary Gland.*

1. Kraft proposes an ingenious method for arresting gastric hemorrhage. Laparotomy is done, and at a point 5 cm. above pylorus and midway between greater and lesser curvatures on anterior gastric wall a purse-string suture is placed, the wall incised and a gastroscope inserted. The purse-string is tightened about the instrument, the stomach inflated and the gastroscope lamp lighted. The stomach, seen from the outside, appears like a Chinese lantern, with the arteries clearly outlined as they traverse the wall. Bleeding points in these vessels appear as breaks in continuity or abrupt terminations, and may show a dark clot attached. A suture is put through stomach wall on the proximal side of each bleeding spot so found, and the serous coat sutured over the ligature.

3. Bayer writes again regarding his method of dilating the prostatic urethra. His instrument resembles a lithotrite, but is used by the opening of the jaws instead of by their closure. This is used repeatedly, until the symptoms of retention and spasm are relieved. Of his 11 cases, 5 showed complete cessation of symptoms, 2 were relieved, 2 were not followed, 1 came to prostatectomy, and 1, which had severe bleeding at the time, died two weeks later of ascending infection. There was severe bleeding in only one case, but slight bleeding in several. Bayer advocates this method in all cases of "chronic prostatic swelling, prostatitis and hypertrophy, with urinary retention, which are aggravated by the pressure of retained urine, but have no severe cystitis." It should not be used in malignant disease. But in all cases not suitable for radical operation, or in cases in which the operation is postponed, this treatment, he says, will give relief, if not complete cure. Bayer may have had a certain measure of success with this method, but it seems unlikely that such a procedure, which at best strikes one as being unsurgical, will get beyond the hands of its inventor. [G. G. S.]

VOL. 93. PART 4.

1. VON HABERER, H. *The Question of Bone Cysts, especially as Regards Bone Transplantation.*
2. VON HABERER, H. *Hemangioma of the Parotid Gland.*
3. *KAUSCH, W. *Bilateral Resection or Unilateral Extirpation for Goiter?*
4. *EICHMEYER, W. *A Communication on the Surgery of the Common and Hepatic Bile Ducts, including the Anastomosis of Bile System with Intestine.* (To be concluded.)
5. FRIEDEL, G. *Defective Vertebral Column from the Tenth Thoracic Vertebra downwards in a Newborn Infant.*
6. KOERBER, E. *The Luxation and Fracture of the Carpal Bones, especially of the Semilunaris and Scaphoid.*
7. RIEM, H. *The Fate of Silver Wire Nets used in the Closure of Herniæ.*
8. *KACZVINSZKY, J. *Postoperative Antisepsis.*
9. ROKITZKY, W. *Partial and Circular Intestinal Plastics to the Skin.*

10. Schüssler, H. *A Contribution to the Operative Treatment of Paraplegia from Tubercular Spondylitis.*
11. Fink, F. *The Operative Reduction of Old Temporo-Maxillary Disarticulations.*
12. Fink, F. *The Operative Replacement of Irreducibly Dislocated Thumbs.*

3. Kausch answers the question as to whether bilateral resection or unilateral extirpation of goiter is better by coming out absolutely for the former. The resection of a wedge-shaped piece from each lobe, as advised by Mikulicz, is easier, Kausch thinks, than the unilateral extirpation of Kocher, and escapes, furthermore, the danger of injuring the parathyroids or the recurrent laryngeal nerve.

4. Eichmeyer's article is mainly statistical, giving the case histories, operations and pathological findings of one hundred and fifty patients with operative disease of the biliary tract, and a minute analysis of these statistics.

7. The observations of Riem as to the final condition of nets woven of silver wire after having been sutured into the abdominal wall to close a hernial gap convinces one that their use is not only foolish, but dangerous. The silver becomes eroded, the diaphragm loses its shape and may possibly wander through the tissues until its loose ends of wire puncture an artery.

8. Kaczvinsky reports 23 laparotomies (12 appendectomies and 11 operations upon the adnexa) in which, by his method of treatment, he was able to close the wound and omit drainage, even though there had been a large abscess evacuated. One severe case of appendicitis died; all of the gynecological cases healed by first intention, with the exception of one, in whom a fistula developed; 6 appendicitis cases healed by first intention, 4 developed subcutaneous abscesses, 1 healed by second intention. The special features of his treatment were the application of alcohol-soaked sponges to the abscess cavity, and the dosing of the patient to the limit with quinine.

Quininum bisulphuricum in water, of the strength of 1 to 11, was used, and 3 ccm. of this, equalling about 4 gr., constituted a dose. It was given intramuscularly in the thigh, three doses immediately after operation, three at 4 P.M., three at 10 P.M. For the three succeeding days, three doses were given, three or four times a day, amounting to 36 or 48 gr. a day. After that, the powder was given by mouth. No abscesses developed at site of injection, and the thigh was not painful. Ear-symptoms were usual, and several patients became temporarily deaf. One had amaurosis. [G. G. S.]

Deutsche Zeitschrift für Chirurgie. Bd. 107.

October — November, 1910.

1. Sumita, M. *Contributions to the Theory of Fetal Chondrodystrophy (Kaufmann) and Osteogenesis Imperfecta (Vrolik), with Special Reference to the Anatomic and Clinical Differential Diagnosis.*
2. *Perthes. *Juvenile Arthritis Deformans.*
3. Juvara, E. *Spinal Anesthesia with Stovaine and Strychnine. Modified Method of Professor Jonnescu.*
4. Exner, A. *Transplantations of the Hypophysis, and the Effect of Its Experimental Hypersecretion.*
5. Exner, A., and Boese, J. *Experimental Extirpation of the Pineal Gland.*
6. Wildt, A. *Interruption of Linear Extension by Inclusion of Rubber Straps.*
7. Axhausen. *The Technic of Omental Plastic in Perforated Duodenal Ulcer.*
8. Kuhn, F. *The Air Compressor in the Hospital. II.*
9. Grunert. *Dislocations of Lisfranc's Joint.*
10. Stoffel, A. *Suggestions for the Treatment of Gluteus Paralyses by Means of Nerve Plastic.*
11. Bertelmann. *Saline Infusion Therapy and the Treatment of Appendicitis.*
12. *Jacobovici, J. M. *A Tenomyoplastic for Inguinal Eventration.*
13. Fessler. *Diagnosis and Treatment of Fractures of the Phalanges and Metacarpals.*
14. Janeway, H. H., and Green, N. W. *The Operative Treatment of Carcinoma of the Cardia.*
15. Ewald, P. *Myositis Ossificans after Traumata in the Healing of Fractures and in Arthropathies.*
16. *Turin, M. *Blood Changes under the Influence of the Thyroid and Thyroid Gland Substance.*
17. zur Verth, M. *Lumbar Anesthesia and Blood Pressure, with Especial Consideration of the Addition of Adrenal Preparations to the Anesthetic.*
18. Marro, A. *Automatic and Gradual Closure of the Tips of Hemostatic Forceps, Histotrites, Intestinal Compressors and Occlusors.*
19. v. Aex, M. *Epiploic Hernia Ventriculi and Its Mechanics.*
20. Wurmbrand, G. G. *Contribution to Case Histories of Subungual Sarcoma of the Toes.*
21. Fritzsche, E. *Experimental Investigations on the Question of Fat Embolism with Especial Consideration of Prophylactic and Therapeutic Propositions.*
22. v. Hippel, R. *Laryngeal Hernia in Man.*
23. Braun, H. *The Employment of Suprarenalin Anemia in Operations on the Skull and the Vertebræ.*
24. Heidenhain, L. *Resection of the Carpus.*
25. Fromme, A. *The Question of the Surgical Treatment of Typhoid Bacilli Carriers.*
26. *Solieri, S. *Invaginations of the Intestine in the Ileocecal Region in Connection with Their Anatomic Disposition.*
27. Klauber, O. *A Further Contribution to the Theory of Retrograde Incarceration.*
28. Cohn, M. *A Case of Strangulated Inguino-Properitoneal Hernia with the Inguinal Portion of the Sac Empty.*
29. Gümbel, T. *Isolated Fracture of the Internal Condyle of the Tibia.*

2. Perthes presents an interesting study of juvenile arthritis deformans, based on six cases of his personal experience. He considers the condition commoner than is usually supposed, especially as affecting the hip-joint. He believes that bacterial infection is the starting-point of the process, which displays itself as a characteristic deformity of the head of the femur. Limitation of motion, pain, crepitus and limp are the prominent signs. The condition must be differented from coxa vara and tuberculous coxitis. The treatment he recommends is not immobilisation, but systematic passive motion and massage. In advanced cases, with bone changes and deformity, resection of the head of the femur may be indicated.

12. Under the term of "inguinal eventration," the author describes a condition in aged or reduced persons in which muscular atrophy and relaxation allow a visceral protrusion in the groin without the formation of a true hernia. For the relief of this condition he describes and illustrates an operation by which the upper third of the sartorius is transplanted across the inguinal region, its severed distal end being sutured to the rectus. This method, which had been previously suggested by Streissler and Gomoin, gave the writer excellent results in a case which he reports.

16. From a series of experiments in the administration of thyroid preparations, with concomitant study of the blood-picture, the author concludes that such administration causes in a short time an increase of lymphocytes with a simultaneous decrease in the total number of leucocytes at the expense of the polymorphonuclear neutrophiles. He therefore believes that the characteristic lymphocytosis and leucopenia of Basedow's disease is to be regarded as a reaction of the blood-forming organs to an increased thyroid secretion.

26. From a study of intestinal intussusceptions in the ileocecal region, on the basis of a case which he reports, Solieri concludes that, in such invaginations, the individual anatomic disposition of this region is to be regarded not as an etiologic but as a predisposing factor in the production of one or another variety of intussusception. [R. M. G.]

Revue de Médecine.

November, 1910.

1. Landouzy, L., Gougerot, H., and Salin, H. *Experimental Bacillary Serous Arthritides. Contribution to the Pathogenic Study of the Bacillary Arthropathies.*
2. Catola, G. *Some Researches on the Central Nervous System of Children Born of Diseased Parents, and Some Considerations on Morbid Predisposition. II.*

3. SABOURIN, C. *Hemoptyses Associated with Bronchial Casts in the Tuberculous.*

REVUE DE CHIRURGIE.

OCTOBER, 1910.

1. *MONOD, C., AND VANVERTS, J. *Documents and Remarks on the Treatment of Arteriovenous Aneurysms.*
2. VIGNARD, P., AND ARMAND, R. *Critical and Therapeutic Essay on the Progress Realized in the Surgical Treatment of Osteo-Articular Tuberculoses.* (To be continued.)
3. GUIBAL, P. *Operative Intervention in a Case of Compression of the Cervical Cord in the Course of Recklinghausen's Disease.*
4. IMBERT, L., AND DUGAS, G. *Minor Traumatisms of the Cranium.*
5. RADÈRE, J., AND CHARBONNEL, M. *Detachment of the Mesentery from the Intestine in Strangulated Hernia.*

1. From an exhaustive study of the treatment of arteriovenous aneurysm, based on a series of 161 cases collected from the literature and presented under eleven groups, the authors conclude that direct intervention on the sac is incontestably superior to ligature, which should, however, be employed under circumstances which render direct intervention impossible or dangerous. [R. M. G.]

NOVEMBER, 1910.

1. QUÉNU, E. *Pain in Hydatid Cysts of the Liver.*
2. VIGNARD, P., AND ARMAND, R. *Critical and Therapeutic Essay on the Progress Realized in the Surgical Treatment of Osteo-Articular Tuberculoses.* (Conclusion.)

BULLETINO DELLE SCIENZE MEDICHE.

OCTOBER, 1910.

1. SECCHI, R. *The Diagnostic Value of the Local Reactions with Tuberculin, with Special Regard to the Cutaneous Reaction of Von Pirquet in Adults.*
2. MANTOVANI, M. *The Sero-Diagnosis of Syphilis by the Method of J. Sabrazès Eckenstein.*
3. *TABBONI, L. *Central and Peripheral Nervous Lesions of Botulism.* (Preliminary note.)

3. The author describes three distinct types of alimentary intoxication due respectively to infection with Gärtner's bacillus enteritidis, with the paratyphoid bacillus, and with the bacillus botulinus. He discusses the phenomena of botulism and presents clinical and anatomic report of a fatal case. He believes that the manifestations in the nervous system are of toxic origin; that the peripheral nerve lesions are not profound; that the neuritides of botulism are prevailingly interstitial rather than parenchymal or degenerative. [R. M. G.]

## Obituary.

### C. COLE BRADLEY, M.D.

DR. C. COLE BRADLEY, a prominent ophthalmologist of New York City, died at his home in New Rochelle on Dec. 30 from septic endocarditis. He was born in Middletown, N. Y., on Nov. 22, 1862, and was graduated from the College of Physicians and Surgeons, New York, in 1885. For seven years he was in general practice at Fordham, now in the Borough of the Bronx, and he then went abroad for a time to perfect himself in diseases of the eye. Soon after his return he was appointed ophthalmic surgeon to the New York Catholic Protectory, St. Joseph's Orphan Asylum, St. Joseph's Institute for the Deaf, and the Home for Incurables at Fordham. Dr. Bradley was especially well known for his work, in connection with the late Dr. Richard H. Derby, in the examination of the eyes of schoolchildren. In 1886 the New York legislature, in consequence of a report made by a committee of the Academy of Medicine, passed a law requiring that the eyes of children be examined on entrance to institutions, and that cases showing contagious disease should be isolated. It also provided for a monthly examination of all the children in institutions. This was productive of much benefit, but in 1903 Dr. Derby pointed out that 60% of the cases entering the institutions came direct from the public schools, where no recognizance of trachoma was taken. Through the reports of examinations made by Drs. Derby and Bradley public attention was attracted to the prevalence of this disease among the pupils, and for the first time the matter was brought home to the board of health. It is now a matter of record how ably the city health department met the situation. Hospitals were established for the treatment, operative and local, of the affected children, and a permanent system of efficient school inspection by competent inspectors was established.

## Miscellany.

### A DISCUSSION OF LEPROSY.

ON Dec. 29 there was a leprosy field night at the New York Academy of Medicine, the meeting being under the auspices of the Section on Dermatology of the Academy. No less than eleven lepers were presented, and among them were two women. All the patients were brought from institutions: One, a Chinaman, from Paterson, N. J.; four from Brooklyn; two from the City Hospital, Blackwell's Island; three from the New York Skin and Cancer Hospital; and one from the German Hospital. The characteristic features of the cases were demonstrated by Drs. Bronson, Bulkley, Fox, Dade, Fischer, Winfield and Wise. The purpose of exhibiting the lepers was stated to be in furtherance of an effort to educate the public regarding the fancied dangers from this disease and do away with the hysterical attitude it has heretofore shown whenever the presence of a leper became a matter of general knowledge. As a result of this feeling on the part of the public, lepers, in fear and terror, often conceal the fact of their having the disease, instead of applying for and receiving humane and intelligent treatment. The sentiment expressed was for the establishment of national leprosy hospitals in Florida and California, it being urged that it was impracticable for the several states to take action, on account of the small number of cases in each state and the likelihood of one state driving its lepers into other states. Dr. S. Pollitzer gave an historical sketch of leprosy in the United States, showing how the disease had been brought into the South by negro slaves, into San Francisco by Chinese immigrants, and into the old sailing-ship ports of New Bedford and Boston by sailors coming from all parts of the world. At present almost all the recorded cases were to be found in the five seaboard states,—New York, Massachusetts, South Carolina, Florida and California, — and a large proportion

of the cases were in Asiatics and negroes. Dr. Charles W. Duval, of Tulane University, New Orleans, described the long series of experiments he had made in segregating the leprosy bacillus and his final success in propagating the bacilli in a culture medium outside the body, and he expressed the hope that he would eventually be able to work out a curative serum. Dr. Howard Fox read a paper on the "Symptomatology of Leprosy," and Dr. Isadore Dyer, of New Orleans, a paper on the "Sociological Aspects of the Disease and the Question of Segregation," in which he gave some account of what the various nations were doing to control leprosy. Among others who spoke were Drs. Brinkerhoff, formerly of the United States Marine-Hospital Service; White, of Boston; Schamberg, of Philadelphia; Pusey, of Chicago; and Montgomery, of San Francisco.

## MASSACHUSETTS BOARD OF REGISTRATION IN MEDICINE.

The seventeenth annual report of the Board of Registration in Medicine has been issued. For the year ending November, 1911, the board asks for an appropriation which is smaller by $100 than the amount appropriated for 1910. It asks for $4,300 for salaries, $450 for incidentals, $800 for clerical service and $900 for printing, postage and office supplies.

All but one of the 270 persons who applied to the board for registration were examined; 246 of these were school graduates, of whom 202 passed and were registered; 44 were rejected. Of the 23 undergraduates who applied, 6 passed and were registered, 17 being rejected.

The following tabulation gives the average ratings of graduates from medical schools represented by not less than three applicants:

| Medical Institution. | Number Examined. | Average Rating. |
|---|---|---|
| Tufts, | 69 | 76.2 |
| Harvard, | 44 | 78.7 |
| Physicians and Surgeons, Boston, | 23 | 65.7 |
| Massachusetts College of Osteopathy, | 19 | 71.2 |
| Boston University, | 13 | 78.8 |
| Dartmouth, | 10 | 77.8 |
| Foreign, | 10 | 71.8 |
| Baltimore Medical, | 6 | 77.7 |
| University of Maryland, | 6 | 75.6 |
| Maryland Medical, | 5 | 70.9 |
| Medical School of Maine, | 5 | 75.1 |
| McGill, | 4 | 84.3 |
| University of Pennsylvania, | 4 | 80.3 |
| University of Vermont, | 3 | 76.9 |
| Laval, | 3 | 54.7 |
| Physicians and Surgeons, New York, | 3 | 80.0 |
| Johns Hopkins, | 3 | 79.2 |

## SEIZURES OF IMPURE FOODS.

Several further seizures of impure food materials in various parts of the United States have been reported during the past week. At Chicago, Ill., the United States deputy marshals raided a car on the Pennsylvania Railroad and seized 6,200 cans containing 124,000 lb. of tomato paste alleged to be "putrid, decomposed and containing filthy matter." This paste was shipped from a firm in Daretown, N. J., to Chicago for use in the preparation of tomato soup at hotels and restaurants. It is stated that the food inspectors found it to contain 500,000,000 bacteria to the cubic centimeter.

At South Boston, Mass., the United States deputy marshal seized last week a consignment of 175 cases each containing three dozen cans of tomato catsup, shipped to Boston from a firm in Mt. Holly, N. J., and alleged to contain decayed vegetable matter.

At Jersey City, N. J., on Dec. 27, 1910, federal officers seized, in the warerooms of a local cold storage company, nine tons of eggs described as "filthy, decomposed and putrid animal matter," and, therefore, held to be unfit for food. These eggs were shipped from Chicago.

## VARIATIONS OF ANNUAL PRECIPITATION IN BOSTON.

During the past fall we have several times referred in the Journal to the drought in Massachusetts and other New England states and the consequent scarcity of water supply in various localities. Advance statistics from the Boston Weather Bureau show that the total precipitation in this city for the year 1910 was only 28.33 inches, a deficiency of 15.05 inches from the normal of 43.38. This is said to be the smallest amount in Boston in any year since 1822, when the precipitation was only 27.2 inches. Moreover, the precipitation in Boston shows a total deficiency of 31.07 inches in the past three years and of 65.52 inches in the past nine years. Certain figures seem to indicate a cyclic or periodic character in the variations of rainfall, since the average amount by decades increased steadily from 1818 to 1868, and has been decreasing steadily ever since. The relation of this question to deforestration is problematical, and can be determined only by further study. It seems likely that the amount of precipitation is also dependent, at least in part, on more subtle and obscure meteorologic and climatic conditions

## Correspondence.

### ORGANIC ARSENIC PREPARATIONS AND "606."

Albany Medical College,
Albany, N. Y., Dec. 28, 1910.

*Mr. Editor:* Erhlich's advocacy of the use of "606" in syphilis has attracted much attention to the various organic arsenic preparations, and many practitioners have suggested the use of the latter as a substitute for the former.

As one of the authors of the only article thus far published [1] which gives an authentic description of the physiologic action of sodium cacodylate based upon pharmacologic investigation and clinical observation, I would esteem it a favor if you would publish a request in your valuable journal that any one who desires information on sodium cacodylate, or any one who has used the drug, successfully or not, communicate with the undersigned.

I am, respectfully yours,
Spencer L. Dawes, M.D.

[1] Dawes and Jackson: Jour. Am. Med. Asso., June 22, 1907, p. 2080.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DEC. 24, 1910.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | — | — | Waltham | 6 | 1 |
| Chicago | 160 | — | Brookline | 9 | — |
| Philadelphia | — | — | Chicopee | 7 | 3 |
| St. Louis | — | — | Gloucester | 11 | — |
| Baltimore | — | — | Medford | 6 | 2 |
| Cleveland | — | — | North Adams | 8 | 2 |
| Buffalo | — | — | Northampton | 10 | 1 |
| Pittsburg | — | — | Beverly | 3 | — |
| Cincinnati | — | — | Revere | 8 | 2 |
| Milwaukee | — | — | Leominster | 3 | 1 |
| Washington | — | — | Attleboro | 4 | 1 |
| Providence | — | — | Westfield | 3 | — |
| Boston | 220 | 40 | Peabody | 4 | 2 |
| Worcester | 47 | 10 | Melrose | — | — |
| Fall River | 38 | 16 | Hyde Park | 6 | 2 |
| Lowell | 33 | 18 | Woburn | 1 | 0 |
| Cambridge | 27 | 6 | Newburyport | 5 | — |
| New Bedford | 35 | 8 | Gardner | 9 | 2 |
| Lynn | 18 | 3 | Marlboro | — | — |
| Springfield | 27 | 6 | Clinton | 2 | — |
| Lawrence | 20 | 10 | Milford | — | — |
| Somerville | 21 | 4 | Adams | 1 | — |
| Holyoke | 18 | 10 | Framingham | 6 | 2 |
| Brockton | 10 | 4 | Weymouth | — | — |
| Malden | 17 | 3 | Watertown | 3 | 0 |
| Haverhill | 15 | 4 | Southbridge | 4 | 1 |
| Salem | — | — | Plymouth | — | — |
| Newton | 13 | 1 | Webster | 2 | 2 |
| Fitchburg | — | — | Methuen | 9 | 4 |
| Taunton | 13 | 5 | Wakefield | 4 | 1 |
| Everett | 11 | 1 | Arlington | 2 | — |
| Quincy | — | — | Greenfield | 6 | 0 |
| Chelsea | 33 | 4 | Winthrop | 4 | 1 |
| Pittsfield | 12 | 7 | | | |

## PRIZE NOTICE.

THE AMERICAN PROCTOLOGIC SOCIETY'S PRIZE FOR THE BEST ORIGINAL ESSAY ON ANY DISEASE OF THE COLON.—The American Proctologic Society announces through its committee that the cash sum of $100 will be awarded, as soon as possible in 1911, to the author of the best original essay on any disease of the colon in competition for the above prize. Essays must be submitted to the secretary of the committee on or before May 10, 1911, to whom all communications should be addressed. Each essay must be typewritten, designated by a motto or device, and without signature or any other indication of its authorship, and be accompanied by a separate sealed envelope, having on its outside only the motto or device contained on the essay, and within the name, the motto or device used on the essay, and the address of the author. No envelope will be opened except that which accompanies the successful essay. The committee will return the unsuccessful essays, if reclaimed by their writers within six months, provided return postage accompanies the application. The committee reserves the right not to make an award if no essay submitted is considered worthy of the prize. The competition is open to graduates of medicine (not fellows of the Society) and to members of the senior classes of all colleges in the United States or Canada. The object of the prize and competition is to stimulate an increased interest in and knowledge of proctology. The committee shall have full control of awarding the prize and the publication of the prize essay, and it shall be the property of the American Proctologic Society.

DR. LEWIS H. ADLER, JR., *Secretary*,
1610 Arch St., Philadelphia, Pa.

## SOCIETY NOTICES.

THE AMERICAN SOCIETY OF TROPICAL MEDICINE.—The eighth annual meeting of the American Society of Tropical Medicine will be held in New Orleans, on Thursday and Friday, May 18 and 19, 1911.

JOHN M. SWAN, *Secretary*,
Watkins, N. Y.

THE WOMEN'S STATE MEDICAL SOCIETY OF MASSACHUSETTS.—The Women's State Medical Society of Massachusetts in conjunction with the Women's Educational and Industrial Union will hold an open meeting on Preventive Medicine at Perkins Hall, 264 Boylston Street, Tuesday, Jan. 10, 1911, at 8 P.M. Program: 1. "A Few Phases of Women's Work in Continental Cities, with views. Advantages and Disadvantages of Study Abroad," Eliza J. Dadmun, M.D. 2. "Neurasthenic Conditions Occurring in Women after Forty Years of Age," Alice G. Symonds, M.D. 3. "Some Lessons from Child Psychology as Applied to the Training of Children," Edith Hale Swift, M.D. 4. "Hygiene of the Mouth and Air Passages," Isabelle D. Kerr, M.D.

ISABELLE D. KERR, M.D., *Secretary*, 2 Commonwealth Ave.
ELIZA J. DADMUN, M.D., *President*, 483 Beacon St.

## RECENT DEATHS.

HASKINS, FRANK HENRY, M.D., M.M.S.S., died in Springfield, Dec. 30, 1910, aged thirty-nine years.

DR. ALBERT SEESEL, of New York, died at the German Hospital, after a short illness, on Dec. 24. He was a native of Germany, and sixty years of age, and was graduated at Leipsic in 1876.

DR. WILLIS GOSS MACDONALD, an eminent surgeon of Albany, N. Y., died on Dec. 30, from pneumonia. He was born at Cobleskill, Schoharie County, N. Y., on April 11, 1863, and was graduated from the Albany Medical College in 1887. In 1889 and 1890 he pursued a course of surgical study at the University of Berlin and after his return to America was successively appointed instructor in surgery and professor of surgery in the Albany Medical College. At the time of his death he was attending surgeon to the Albany Hospital; the Noble Hospital at Westfield, Mass., and the South End Dispensary. In the Spanish-American War he was surgeon of United States Volunteers, with the rank of major. Dr. Macdonald was one of those most instrumental in securing the establishment of the Raybrook State Hospital for Incipient Tuberculosis in the Adirondacks, and since 1900 he had been a trustee of the institution.

DR. FRANK WHITMAN, who died on Dec. 20, 1910, at Cambridge, Mass., was born in Boston on May 4, 1835. He received the degree of M.D. from the Berkshire Medical College in 1863 and immediately volunteered in the Fifty-Eighth Massachusetts Regiment, with which he served as surgeon through the remainder of the Civil War. He subsequently settled at Bellows Falls, Vt., where he practised medicine until shortly before his death.

DR. ARTHUR B. MUDGE, who died of heart disease on Dec. 26, 1910, in Lynn, Mass., was born in that city on Dec. 14, 1854. He practised dentistry in Lynn for many years. He was a member of the Massachusetts Dental Association.

DR. HORACE S. FULLER, who died of heart disease last week at Hartford, Conn., was born in 1835. During the Civil War he served as an assistant surgeon at Fort Schuyler. He received his medical degree in 1865 from the New York College of Physicians and Surgeons. He subsequently settled at Hartford, and was for many years medical examiner of that city. He had been blind for some time prior to his death.

DR. CHARLES J. CURRAN, who died at North Adams, Mass., on Dec. 30, 1910, was born in South Hadley Falls, Mass. He was educated at Holy Cross College and graduated from the Medical School of the University of New York in 1881. He immediately settled in North Adams, where he had practised medicine ever since. He served from 1881 to 1887 on the local board of health, in 1887 and 1888 as town physician and in 1905 and 1906 as city physician of North Adams. In 1884 he was appointed United States examining surgeon for pensions, and from 1891 to 1896 served as a member of the Massachusetts State Board of Lunacy and Charity. He was a widower and leaves no children.

## BOOKS AND PAMPHLETS RECEIVED.

A Conference of Ophthalmologists with Organization Officials on Family Physician Refracting. By Leartus Connor, M.D., Detroit, Mich. Reprint.

Report of Committee on Promotion of Family Physician Refracting. By Leartus Connor, chairman. Detroit, Mich.; A. R. Baker, Cleveland; O. J. Thorington, Philadelphia, Pa. Reprint.

Family Physician Refracting as a Factor in Medical Practice and its Promotion during 1910. By Leartus Connor, M.D., Detroit, Mich. Reprint.

The Relation of Blood Platelets to Hemorrhagic Disease. By W. W. Duke, M.D., Kansas City, Mo. Reprint.

Treasury Department, Public Health and Marine-Hospital Service of the United States. Reprint from Public Health Reports No. 52. Bacteriological Procedure in Suspected Cholera with Report of a Positive Case. By John F. Anderson and A. M. Stimson.

Treasury Department. Hygienic Laboratory Bulletin No. 70. A Study of Melting-Point Determinations. By George A. Menge. Reprint.

Manual of Clinical Pathology. By Richard Weiss, M.A., Ph.D., F. C. S. London, 1910.

# Original Articles.

## ACUTE POLIOMYELOENCEPHALITIS (INFANTILE PARALYSIS).*

BY JOHN LOVETT MORSE, A.M., M.D.,

*Assistant Professor of Pediatrics, Harvard Medical School; Associate Physician at the Children's Hospital and at the Infants' Hospital, Boston.*

My apology for presenting this subject to-night is that Dr. Flexner was unable to accept the invitation of your committee to read a paper on the same subject. I am unable to give you the results of any original investigations of my own, but can only present a summary of our present knowledge of this subject, give a brief survey of the different manifestations of the disease and detail my own opinions as to the proper methods of treatment. Much of what I say will be in quotation marks, and more of it ought to be.

We are justified in stating, on the basis of the work of Flexner and Lewis and others, that acute poliomyeloencephalitis is due to an ultramicroscopic organism. This organism belongs in the class of the filterable viruses in which belong the organism of foot and mouth disease and those of a number of other diseases of animals.

### THE VIRUS.

Filtrates of aqueous emulsions of the spinal cord of human beings or animals dead of this disease are highly potent, 1-1000 ccm. of such a filtrate being sufficient to cause paralysis in monkeys after the usual period of incubation. The virus is very resistant to external agencies and conditions. It withstands glycerinization for weeks or months and drying over caustic potash for weeks. Its virulence is not impaired by freezing for weeks at temperatures from $-2°$ C. to $-4°$ C. It is, however, readily injured by heating, temperatures of from 45° C. to 50° C. for one-half hour rendering it inert. It is readily destroyed by a 1% solution of peroxide of hydrogen and by simple disinfectants such as menthol. It is very questionable whether it has ever been cultivated outside the body, although bouillon inoculated with the virus has become turbid after inoculation. However this may be, paralysis has never been produced by inoculations with any of these possible cultures.

### ANIMAL SUSCEPTIBILITY.

Inoculation experiments have been unsuccessful in all the warm-blooded domestic animals, including chickens and pigeons. This, of course, shows that the epidemic paralytic affections of animals are due to other organisms, and that the disease cannot be contracted from them. Various species of monkeys are, however, very susceptible to infection.

### MODES OF INFECTION.

Infection has been produced experimentally in monkeys by the introduction of the virus intracerebrally, into the peritoneal cavity, into the circulation, subcutaneously, into the spinal canal, into large nerves and through certain mucous surfaces. The introduction of large quantities of the virus into the stomach or duodenum does not lead to paralysis unless the peristalsis is arrested by opium. It must be very seldom that the peristalsis is arrested to the same extent in human beings that it is by opium in monkeys. Infection through the gastro-enteric tract seems, therefore, very improbable. The mucosa of the nasopharynx is more easily traversed by the virus than any other avenue except the brain. If this mucous membrane is lightly scarified and the virus rubbed in, infection occurs promptly. The tracheal mucosa and the lungs do not allow the entrance of the virus unless there are gross lesions, such as would seldom if ever be present in human beings.

### MODES OF ESCAPE.

The virus certainly escapes from the body through the nasopharyngeal mucous membrane. This is proved by the fact that emulsions of the nasopharyngeal mucous membrane of monkeys inoculated intracerebrally with the virus produce the disease in other monkeys. It is not present in the feces, urine, intestinal mucosa or bile.

### CONTAGIOUSNESS.

Acute poliomyeloencephalitis is undoubtedly contagious. It is only necessary to study the history of recent epidemics to be certain of this fact. Further evidence in this connection is the effect of quarantine in limiting the spread of the disease in certain of the recent western epidemics. A study of these same epidemics shows, however, that it is certainly not very contagious. Emerson's figures in his study of the Colrain epidemic of 69 cases show this very plainly. Only two of the patients in this epidemic were isolated during their illness. There were 166 children in the families in which the other 67 cases occurred, only 4 of which developed the disease. There were 4 instances in which the sick child slept with a brother or sister up to the time of the illness, 7 during the first few days of the illness and 5 throughout the entire illness. There were 9 instances in which the other children of the family drank from the same cup, and 12 in which the children in the family and the neighbor's children kissed the sick child during the acute stage. Out of the entire number involved in the intimate contact just described, but 2 developed the disease. Eighty-six other children among neighbors and friends were also in intimate contact with the 67 patients. By intimate contact is meant as free intercourse between the well and sick as the patient's condition would permit. Further evidence that the disease is not very contagious is the fact that it seldom if ever develops in hospitals in which the disease is being treated. No case has ever developed in the wards of the Children's Hospital, although patients with the disease have been treated there for many years. There was a single case in the St. Mary's Infant Asylum in the summer of 1909. In spite of the fact that the

* Read at the joint meeting of the Suffolk District Medical Society and the Boston Medical Library, Nov. 16, 1910.

contact with the other babies and children was very close, no other cases developed.

METHODS OF CONTAGION.

There are no definite data as to how contagion takes place. The fact that it has been proved experimentally that the virus may enter and escape through the nasopharyngeal mucous membrane suggests that this is the usual portal of entry and that the virus is contained in the secretions of the nasopharynx. Further evidence in this direction is the analogy with cerebrospinal meningitis in which the organism is found in the nasopharynx of patients ill with the disease, of convalescents and of persons who have been associated with them. This analogy with cerebrospinal meningitis leads us to believe that acute poliomyeloencephalitis may be transmitted by convalescents, by those who have had the disease in an abortive form and by "carriers."

The facts that epidemics cease with the onset of cold weather and that the virus is resistant to cold suggest an intermediate host which is destroyed by cold, that is, some insect. There is, however, no proof whatever of this supposition. There is no data whatever as to whether the virus may be carried by clothing, fruit or other articles of food. In all probability, however, it cannot be carried in this way.

PERIOD OF INCUBATION.

Experimentally, the period of incubation varies between three and thirty-three days, the average being eight or nine days. Clinically, the period of incubation may be as short as twenty-four hours. It is impossible to state how long it may be, because it is probable that if the organism enters through the nasopharynx it may remain latent in the nasopharynx for days or weeks, as is the case in diphtheria and probably in cerebrospinal meningitis. Since the period of incubation is unknown, it is impossible to state how long the period of observation should be. Roughly, it may, perhaps, be placed at three weeks.

PROTECTION AGAINST CONTAGION.

There is no question but that patients with acute poliomyeloencephalitis should be quarantined in much the same way as those with scarlet fever and diphtheria. The only question is how long this quarantine should be. At the present time we have no data on this point. I have personally adopted three weeks as the period of quarantine. It may be, however, that three days is long enough, or it may be that three months is necessary. It would be of great advantage if the State Board of Health would set some definite time, even if this time is wrong and has to be changed later. Other questions which immediately arise are whether the other children in the family shall be allowed to mix with their playmates and attend school, and whether the attendants and other members of the family shall be quarantined. At present it seems wise to keep the other children of the family out of school for a number of weeks. It is hardly possible, however, to compel the adult members of the family to give up their work and pleasure.

It is possible that hexamethylenamin may prevent the escape of the organism from the body. It seems wise, therefore, to give it to patients during the acute stage. It is also possible that it may hinder or prevent the development of the organisms in persons exposed to the disease. It seems reasonable, therefore, to give this drug to those who are exposed.

Since peroxide of hydrogen destroys the organism, and since the organism is undoubtedly present in the nasopharynx in some if not in all cases, it seems rational to spray the nasopharynx of patients with weak solutions of peroxide of hydrogen in order to diminish the chances of the infection of others. Since the virus may enter through the nasopharyngeal mucous membrane, it seems reasonable to attempt to prevent such entrance by using peroxide of hydrogen in the nose and throat of those who have been exposed to the disease. It must be remembered in this connection, however, that peroxide of hydrogen is an irritant to the nasopharyngeal mucous membrane of many people, and in such people it might further increase the danger of infection.

A second attack of the disease is extremely rare in the same individual. Reinfection is impossible experimentally. Active immunity has been produced in animals. "At present, however, the experimental basis is entirely inadequate to justify the attempt to induce active immunity as a protective measure in human beings."

The only general advice which it is safe to give at present to those who ask what they shall do to prevent their children from contracting the disease is that they should not deliberately go to a place where there is infantile paralysis and that, if they are in such a place, they should, as far as possible, keep their children away from other people. In individual instances it may be wiser to take children away from localities in which the disease is prevalent. The danger of infection is, however, hardly great enough to warrant such advice to a community as a whole. There is no question but that acute poliomyeloencephalitis is one of the most terrible of diseases, in that it is not only frequently fatal but especially in that a large proportion of those who do not die are left more or less paralyzed for life. The importance of the disease has, nevertheless, been greatly exaggerated within the last few years, probably partly because of the increased prevalence of the disease, but largely because of the newspaper notoriety which it has received. The largest epidemic which has ever occurred in Boston was in 1909. There were 299 cases in Boston in that year, 20 of which died, giving a mortality of 7%. There were 107 cases of tubercular meningitis reported during the same year, all of which died. Tubercular meningitis, like other forms of tuberculosis, is preventable! During this period there were 2,095 cases of scarlet fever, 82, or 3.9% of which died, 2,720 cases of diphtheria, 193, or 7.1% which died, and 666 cases of typhoid fever, of which 91, or 13.6%, died. No one seems to be

especially worried about these diseases, however, and the newspapers are not filled with accounts of them!

PATHOLOGY.

"Wherever the virus enters it has a predilection for the nervous system. The first lesion is a leptomeningitis. Cellular infiltrative changes are set up which are most marked in the perivascular lymph spaces of the arteries entering the nervous tissues. The vascular lesions constitute the primary causes of the lesions of the nervous tissue, the severity of which is determined by the particular vessels affected and the intensity of the involvement." Secondary lesions occur in the intima which result in edema and hemorrhage. The anterior horns are most affected because the arteries are larger; the lumbar and cervical enlargements, because the blood supply is more abundant. All parts of the central nervous system may be involved, both the gray and the white matter. The peripheral nerves show parenchymatous degeneration. "In the severe or fatal cases the entire cord with its pia mater, the entire medulla oblongata and pons, the basal ganglia and often the cortex of the brain are involved, the degree of the involvement varying in different instances. In the mild cases the process is much more extensive than was formerly supposed. All gradations between the mild, serious and fatal cases are found pathologically." It is evident, therefore, that our conception of the disease must be enlarged to include the acute polioencephalitides, both cortical and basal, and the poliomyelitides as well as many transitional forms. A better term for the disease than infantile paralysis or acute poliomyelitis is, therefore, acute poliomyeloencephalitis.

SYMPTOMATOLOGY.

If we think of the disease as a poliomyeloencephalitis with meningeal complications and appreciate the fact that the disease may affect any or all parts of the gray matter of the central nervous system, and in all possible combinations, we shall understand better the innumerable manifestations of the disease and be less likely to overlook it or mistake it for some other condition. We must never forget how variable the symptoms may be. If we are awake to all the possibilities, we are not likely to overlook it. The best classification of the various manifestations of the disease is that of Wickman.

*Wickman's Classification.*

1. Ordinary spinal paralysis; anterior poliomyelitis.
2. Progressive paralysis, usually ascending, less often descending; Landry's paralysis.
3. Bulbar paralysis; polioencephalitis of pons.
4. Acute encephalitis, giving spastic mono- or hemiplegia.
5. Ataxic form.
6. Polyneuritic; multiple neuritic type.
7. Meningitic form.
8. Abortive form.

*Ordinary form.* — It is hardly necessary to take up the ordinary spinal form of paralysis, with which you are all familiar. It must be remembered in this connection, however, that the paralysis may involve only single muscles, such as those of the neck, abdomen or back. Incidentally, when the abdominal and back muscles are involved, the prognosis is very good.

*Progressive type.* — The following history is a good example of the progressive type.

A boy, ten years old, began to complain of pain in the legs Aug. 18 and by night was unable to walk without help. Pain and loss of power were rather more marked on the 19th. A physician who was called found a temperature of 102° F. and made a diagnosis of rheumatism. The pain and fever continued. Pain and loss of power appeared in the arms Aug. 21. The morning of the 22d he began to have difficulty in breathing and to have what were supposed to be convulsions. He rapidly became unconscious. Micturition and defecation were both involuntary.

He was moderately cyanotic. Respiration was short and gasping, but not very rapid. Frothy mucus ran from the mouth occasionally or was spit up with considerable difficulty. He was entirely unconscious. There was occasional twitching of the face. There was no rigidity of the neck. The pupils were equal and reacted to light. The chest was fully expanded and immobile; it was tympanitic on percussion. The abdomen was moderately distended and tympanitic. The diaphragm moved, but the excursion was very slight. There was a complete flaccid paralysis of all the extremities. The knee-jerks were absent. Kernig's and Babinski's signs were also absent. He died a few hours later.

*Bulbar type.* — The following cases are good examples of this type. The first belongs in the class which has in the past been called polioencephalitis superior, and the second in the class which has been called polioencephalitis inferior.

A boy, five years old, seemed a little out of sorts Aug. 16. The next day, while walking along the street, he felt weak, leaned against a fence and vomited. He then walked a short distance, sat down in a chair on the piazza and slept for half an hour. On waking he was unable to walk because of staggering. The eyes were turned upward and remained in this position until the next day. He talked and seemed rational. He had no paralysis of the face or extremities. He twitched a good deal for several days and had cold sweats. The staggering gait lasted about a week. He complained at times of double vision. Strabismus was noticed about Sept. 1. He was seen Sept. 19.

Physical examination was entirely negative except for complete paralysis of the left external rectus and partial paralysis of the right. The pupils were equal and reacted to light. The optic disks were normal.

A boy of five was taken suddenly sick with fever and vomiting July 26. The vomiting and fever continued. He began to have difficulty in swallowing the morning of the 28th and his voice became a little hoarse. When seen at 4 P.M. he

talked in a whisper and apparently had some trouble in swallowing. Examination of the mouth and throat, however, showed nothing abnormal. The neck was held rather stiffly. Nothing else was detected by a very careful general examination. The next day he was unable to swallow anything, even his saliva. When seen at 9 P.M. the whole of the right side of the face, including the forehead, was paralyzed. The tongue was protruded in the median line. The uvula could not be elevated. The pupils were equal and reacted to light. There was no strabismus and no stiffness of the neck. There was a complete paralysis of the extensor muscles of the right arm. The left arm and the legs were normal. The knee-jerks were present.

*Acute encephalitic type.* — The following case is a good example of this type and shows how difficult the diagnosis is in this class of cases, which is more often than the others confused with tubercular meningitis.

A boy, three years old, fell down stairs, striking his head, early in the morning of Aug. 3. He was apparently not hurt and appeared well all day. He began to vomit during the morning of Aug. 4 and continued to vomit at intervals of about an hour until 3 A.M., Aug. 5. He did not vomit again. There had been no known indiscretion in diet and the bowels were open. He was delirious in the early morning. He was seen at 2 P.M., Aug. 5.

He was restless and irrational, but when roused noticed a little. There was no rigidity of the neck and no neck-sign. The pupils were equal and reacted to light. There was no spasm or paralysis. The knee-jerks were equal and normal. The Kernig and Babinski signs were absent and there was no ankle clonus. The temperature was 99.8° F., the pulse 120, the respiration 36. The rest of the physical examination and the urine showed nothing abnormal.

The fluid obtained by lumbar puncture was under considerable pressure. It was at first clear and then somewhat blood stained. No fibrin clot formed in twenty-four hours. It contained 360 cells to the cubic millimeter, a part of which were undoubtedly due to the admixture of blood. The differential count of these cells, which showed 90% of mononuclears and 10% of polynuclears, shows that only a few of them came from the blood, because if many of them had come from the blood the number of polynuclear cells would have at least equalled that of the mononuclears. No tubercle bacilli or other organisms were seen in a routine examination, and cultures were sterile.

He passed a very restless night and at times was quite noisy, requiring morphia to keep him quiet. He was quiet and drowsy during the morning of Aug. 6. There was no rigidity of the neck or neck-sign. The pupils were equal and reacted to light. The knee-jerks were equal and lively, the abdominal and cremasteric reflexes normal. There was no Kernig's sign or clonus.

He was quiet Aug. 7. There was slight rigidity of the neck. The pupils were equal and reacted to light. The knee-jerks were present but sluggish. There was a suggestion of Kernig's sign on the left, but none on the right. The Babinski phenomenon was absent.

Improvement was steady and uninterrupted from this time on.

*Polyneuritic type.* — The polyneuritic type, understanding by this term the type in which there are pains in the extremities, is very common. The pains are sometimes in the joints, more often along nerve trunks or indefinite in their distribution. They are usually most marked in the paralyzed parts. In a few instances I have found tenderness over the nerve trunks. Pain and tenderness have in several instances been so severe as to cause the attending physician to make a diagnosis of rheumatism and to entirely overlook the paralysis. On account of the pain on motion the extremities are often held rigidly and all motions as vigorously resisted as possible. This combination of rigidity and resistance is possible, of course, only when the muscles are but partially paralyzed or when some of them are intact. The failure to appreciate the significance of this condition of combined flaccidity and spasticity has led, in my experience, to many errors in diagnosis during the acute stage.

*Meningitic type.* — The following case is a good example of this type, which is often confused with cerebrospinal meningitis. This patient was, in fact, shown by one of the instructors in the medical school as a case of cerebrospinal meningitis.

A girl, three and one-half years old, was taken suddenly sick Sept. 5 with a high fever. She was very irritable and complained of pains all over, but especially in the head and back. She cried out when touched and lay with her back arched and head drawn back. She had not vomited. The bowels were constipated. She passed urine normally. She was seen Sept. 9.

She was irrational and very irritable, crying out sharply when disturbed. The ears were normal. The pupils were equal and reacted to light. The eyes were kept closed and there was a moderate amount of photophobia. The neck was rigid and apparently tender. The spasm, however, seemed to be partly voluntary. The back was arched and rigid, but the spasm here also seemed to be partly voluntary. She did not use her right arm. The hand was clenched with the thumb inside. She did not move her left leg at all, but moved the right slightly at the hip. The extremities were somewhat rigid and passive motions caused much pain. The knee-jerks were absent. Kernig's and Babinski's signs were absent. There was no disturbance of sensation.

*Abortive type.* — It is very difficult to give illustrative cases of the abortive type because, if there is no paralysis, it is impossible to prove that they are cases of poliomyeloencephalitis. Such instances as the following show how indefinite this type may be. There were eight children of about the same age in a small summer colony at the seashore. All of them had an acute gastro-intestinal disturbance with slight fever lasting four or five days. One of them was found, a week later, to have a slight paralysis of both legs and one arm. He undoubtedly had acute poliomyelo-

encephalitis. It is fair to assume that the others had it also in an abortive form which did not result in paralysis.

A good deal has been written recently about a triad of early symptoms, sweating, irritability and hyperesthesia. I have seen all of these symptoms, singly or in combination, in the early stages of this disease, but my experience leads me to believe that they are not at all constant. If they are present, they are strong evidence in favor of this disease, but their absence does not count against it. The hyperesthesia is the most constant and the most important of the three.

*Leucocytosis.* — There is a considerable amount of scattered data as to the leucocyte count in acute poliomyeloencephalitis. Some observers have found a diminution in the number of cells, others a considerable increase, others have obtained no constant results. Lucas, in his experimental work with monkeys, found that there was always a marked drop in the number of white cells during the acute stage, the lowest count being on the second day after the appearance of the paralysis, the diminution in some cases being as much as 50%. There was also a lymphocytosis during the acute stage. He found little or no increase in the number of white cells in four cases in children, but a decided lymphocytosis.

My own experience is limited. I have never found a diminution in the number of white cells, but usually an increase, in some cases as high as 34,000. I have made no differential counts.

*Spinal fluid.* — Experimentally, there is an increase in the number of white cells during the stage of incubation, the majority of the cells being mononuclear, some of them polynuclear. There is a greater increase during the prodromal stage, the proportion of mononuclear cells being still greater, while during the early acute stage there is a very marked increase in the number of cells, all of the cells being mononuclear. The fluid shows a fibrin clot. At the end of from seven to ten days very few cells are left, some of which are again polynuclear. Clinically, the fluid is often under increased pressure during the early stage, is always clear and in most instances contains a fibrin clot. It contains an excess of cells which are practically all lymphocytes. In my cases the number of cells has varied between 75 and 360 to the cubic millimeter. The fibrin clot soon disappears, the cells diminish in number, the proportion of large mononuclear cells increases and finally some polynuclear cells appear. I have found an excess of cells in the cerebrospinal fluid as late as the twentieth day.

## DIAGNOSIS.

It must be admitted that the diagnosis of acute poliomyeloencephalitis is at present impossible before the appearance of the paralysis. We may suspect it, however, in times of epidemics. There is nothing constant about the early symptoms, which in some instances are like those of ordinary gastro-intestinal disturbances, in others like those of colds and sore throats, and in others entirely indefinite. The only way in which, with our present knowledge, we can make the diagnosis in every instance before the appearance of the paralysis is to say that every sick child we see during the summer may be developing infantile paralysis. The triad of symptoms already mentioned is not at all constant. The hyperesthesia is the most important. The number of white corpuscles is so variable that the leucocyte count is of but little value in differential diagnosis, although a hypoleucocytosis points somewhat toward poliomyeloencephalitis. If further investigations show that there is a relative lymphocytosis in the early stages, this point will probably be of considerable importance.

It is almost certain that the diagnosis can be made in the early stages of the disease before the appearance of the paralysis from the examination of the fluid obtained by lumbar puncture. In order to make such early diagnoses, however, it would be necessary to do lumbar punctures on every sick child during the summer, since there is nothing about the early symptoms to distinguish the onset of poliomyeloencephalitis from that of any other disease. This hardly seems a rational procedure. In many instances, moreover, it is impossible from the examination of the cerebrospinal fluid to make a diagnosis between tubercular meningitis and poliomyeloencephalitis, since in both instances the fluid may be clear and the number of cells not greatly increased. The great majority of the cells in both are, moreover, lymphocytes. The finding of tubercle bacilli in the fluid is, of course, proof that the condition is tubercular meningitis. Tubercle bacilli are, however, not found in more than 10% of the cases of tubercular meningitis unless the examination is much more careful than the usual routine one. The fluid in cerebrospinal meningitis is materially different, being turbid or purulent and containing a great many cells, the majority of which are polynuclear, and usually many organisms.

Finally, we are sure to miss the abortive cases.

## PROGNOSIS.

The prognosis as to life depends, of course, on the nature of the individual case. It is practically hopeless in the lower bulbar type and in the progressive type when the muscles of respiration are involved. It is impossible to give a general prognosis as to life. Statistics on this point are all unreliable because only the cases with paralysis are included. The abortive cases are overlooked and many of the fatal encephalitic cases are unrecognized.

It is impossible to give an accurate prognosis early in the disease as to how complete the recovery from the paralysis will be. The paralysis may entirely disappear in the most marked cases and, on the other hand, may improve but little when the original paralysis is slight. In general, it is safe to promise that the final paralysis will be much less than the initial, that in all probability some paralysis will remain, that but little improve-

ment will occur after the first six months and none after the first year.

TREATMENT.

The prophylactic treatment has already been considered.

Hexamethylenamin can do no good after the appearance of the paralysis, because the harm has then already been done. It is possible, perhaps probable, that it may do good if it is given before the appearance of the paralysis. It certainly should be given to all children who may possibly have been exposed to the disease. Since there is nothing characteristic about the early symptoms of acute poliomyeloencephalitis, it would be necessary, in order to give it in time, and in order not to miss any of the cases, to give it to every sick child all summer, which certainly does not seem reasonable.

Local applications are useless. It is unreasonable to expect any application on the outside of the body to affect a micro-organism in the inside of the spinal canal. It is also unreasonable to expect to diminish the congestion in the spinal cord by applications externally, because, in the first place, there is no direct communication between the circulation on the outside of the body and that of the spinal cord, and because, in the second place, the congestion is not due to an increased supply of blood, but to a blocking of the arteries from an infiltration of cells on the outside of the vessels. The only effect which outside applications have is to make the patient uncomfortable.

The use of the affected parts, electricity and massage must be avoided during the acute stage, because stimulation of the peripheral ends of the lower motor neurons causes stimulation of the ganglion cells of the neurons and consequently tends to increase the trouble. It is rest and not stimulation which the ganglion cells need. These measures should not be begun until six weeks after the onset of the paralysis. If there is pain or tenderness, they should not be begun until three weeks after the cessation of the pain and tenderness, however long this may be.

Strychnia must be avoided in the acute stage because it is a stimulant to the lower motor neurons and, as already stated, it is rest and not stimulation which is needed.

Flexner states that "the serum treatment of poliomyelitis must at the present time be regarded as strictly in the experimental state, and it cannot be predicted how soon or whether ever at all such a form of the specific treatment of the disease will be applicable to the spontaneous epidemic disease in human beings."

It is probable that on general principles moderate catharsis and a light diet are of some use in limiting the progress of the disease.

A very important part of the treatment during the acute stage is that directed to the prevention of contractures. These develop very quickly and, if they develop, make the later treatment much more difficult and materially delay recovery. The development of contractures can easily be prevented by using a cradle to keep the weight of the bedclothes off of the legs and by the proper application of light splints.

I will leave the later treatment of these cases to the gentlemen who follow me, as they are far more competent than I am to speak of it.

## THE TREATMENT OF ACUTE POLIOMYELITIS.*

BY W. E. PAUL, M.D., BOSTON.

AN intelligent conception of treatment requires a clear idea of the one essential structure in which is the lesion responsible for nearly all the poliomyelitic wreckage. That one structure is the anterior cornual cell and its peripheral prolongation, the lower motor neuron. The preservation and restoration of this unit is vital.

The care of poliomyelitis may be divided into three stages: First, that of the acute illness; second, that of the convalescence; third, that of the permanently damaged neuromuscular structures.

The period of acute illness extends through the time of constitutional disturbance and merges into the convalescent period with the cessation of fever and the diminution of pain. Van Gieson's conception of cytolysis, cytoclasis and cytothesis applies notably to the pathological course of poliomyelitis. A nerve structure, such as a cornual cell, may be hurt in varying degree up to the limit beyond which restoration in any measure is impossible. This injury between the limits of some measure of recovery is denominated cytolysis; the destruction of a cell is cytoclasis; the building up of a damaged cell is cytothesis.

The earliest treatment of the acute stage has been described by Dr. Morse and is directed to attempts to lessen the cytolysis or the effects of the infection.

Practically no dissent exists regarding the importance of one measure uniformly to be carried out during the acute period. This measure is rest as complete functionally and bodily as can be maintained in bed. Though hard for the parents to see nothing being done for the paralysis, it is probably true that cytothetic process in the parts vitally necessary for functional restoration is most beneficently favored by rest. If the nerve structures affected by the infection are not restored, it is a simple corollary that the muscles over which they preside are beyond help from medical art. Primarily, then, in the acute stage the therapeutic aim is to lessen and arrest the processes of cytolysis.

In the early convalescent period a tendency to contracture not infrequently develops, at the elbow, shoulder, ankle or knee. The weight of the bedclothes on the feet is especially insidious in producing equinus positions. A frame supports the bedclothes over the feet, and strapping and light splinting may be required, or perhaps a Gower's boot applied. As a rule the continuance

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of pain prohibits active measures and requires that quiet and rest be continued. The average period of rest would be four to six weeks. Fresh air, good nutritive measures and keeping up the patient's spirits are helpful. Special pains should be taken to keep a cold extremity warm.

The time for active treatment has now arrived and a multitude of measures could be enumerated which at times might be of some use. The healing forces of nature are the vital factors. If she restores the central nerve structures we can hardly thwart her measure of cure, and our therapeutic attempts are at best her feeble aids. It is true, however, that a small functional gain rewards the effort and gives a good indorsement to the means by which it is attained.

The chief measures of treatment in the convalescent stage are electricity, exercises active and passive, and massage.

Perhaps no measure of treatment has received more estimates of its value than electricity, and it is not strange when it is regarded from some points of view. If the amount of useless, routine, electricity that has been given in poliomyelitis without definite purpose influences the judgment of its value, one is led to say all electrical treatment is without effect. Naturally it is difficult for a conscientious physician who uses electricity rarely and empirically to be at all satisfied with such therapy.

Again, if one considers that some muscles remain powerless after electrical treatment, he is led to condemn electricity as it fails where it is most essential to attain a cure.

Electricity is further condemned because some young children react to the sensations from an electric current by crying, becoming unmanageable and getting nervous. Such conditions are partly due to lack of tact. In most children it is possible to give electrical treatment if the initial séances are carefully managed.

The chief influence against a fair judgment of the value of electricity comes from a misapprehension of the indications for its application as well as from lack of instruction and training in the use of this remedial means. Hardly a single article on treatment with electricity describes accurately or definitely electrical therapy as applied to degenerated nerves. It is this that leads to so much that is futile in giving electricity, and most of such therapy could easily be called meddlesome.

What is aimed at in the use of electricity? Exercising a muscle that can in no other way be made to contract, or which is weak in function. This gives great value to electricity as it makes a muscle come nearer functioning than is possible by other means. On closing the current a contraction occurs in a portion of the muscle and this can be repeated as many times as desired. The different portions of a muscle are thus exercised, though the muscular response is far below that obtained in a healthy muscle. If a muscle is thus exercised it seems probable that it will be in better condition to take up function when the regenerated nerve supplying it resumes functional conductivity than would be the case if exercising by electrical stimulation had been omitted.

Should a nurse or the doctor give electricity? The best results can be obtained only by skillful applications. Rarely is a nurse trained to secure muscle reactions with properly selected currents and poles. The physician trained in the use of electrical apparatus is the one who should do such work.

In poliomyelitic paralyses there exists in varying degree the electrical muscle reactions accompanying degeneration of nerves. The chief electrical feature is that there ceases to be any response through the nerves to faradism or galvanism. The only response obtainable is by direct stimulation of the muscle itself, and the only current that can stimulate the muscle is the galvanic. Galvanism is, therefore, to be chosen in the electrical treatment of the paralyses. Unless the higher and more complete degrees of paralysis exist, the muscle will react better to the negative pole; that is, it will react with less current and with more muscular power. The reaction of degeneration which is thus used in treatment consists of a slow progressive contraction of part of the muscle as contrasted with the quick response of most of a muscle in normal reactions.

The faradic current is efficient if the muscle is weakened but not paralyzed and a contraction of the muscle can be obtained by stimulation through the nerve supply or at the motor point. In such muscles a fair degree of voluntary muscular power is retained and functional use is more potent as a remedial measure than electricity.

But the important use of electricity is the application of the galvanic current in cases of paralysis in which there is no voluntary movement in the muscle and no muscular response through electrical stimulation of the nerve supply. In these cases if the degeneration of the nerve is complete enough to give a better response to the positive pole, then the positive pole should be used to stimulate the muscle in treatment; if a less degree of degeneration is evidenced by better response to the negative pole, then the negative pole is the one to apply directly to the muscle in treatment. Daily or triweekly applications are advisable. Thirty to fifty times at one sitting is a good number of times to exercise a muscle with the galvanic pole selected. The indifferent pole should be placed at different sites each time; one day it may be applied to the nape of the neck, another over the sternum, etc.

If no contraction can be obtained by galvanism, the current may be applied over the muscle on the assumption that sensory stimuli reach the motor arc with some influence for good. The negative pole should be used over the muscle in this method.

Applied to the spine electricity is probably valueless.

To go into the detail of electrodes, electrophores and batteries would require too much time.

Exercises are prescribed for the weakened muscles which preserve some voluntary power.

They should be given under the nurse's or mother's direction if the child is able to follow directions or imitate the instructor. Each movement should be made three to five times at first and later the number of times increased; resistance may be made to the movements. Dr. John Ridlon tersely states that "active movements performed by the patient himself have positive curative value, probably greater than any other remedy."

Passive movements preserve the normal range of a joint and help prevent contracture.

Ingenious adaptations may be made of toys and playthings, as, for instance, squeezing a rubber ball or automobile horn, using a dynamometer, using a bow and arrow, the return ball, drumming, kicking football, etc. The Zander machines are valuable and can more definitely determine a special exercise than other methods.

Massage should be begun early in the active treatment a month or six weeks after the onset of the disease. At first gently rubbing is enough, but in two or three weeks kneading can be added. The massage should not cause pain and in the neuritic form will of necessity be of very mild degree in the earlier weeks. Massage stimulates and maintains nutrition.

The average case will be getting about a little in the sixth week and within two months is out of doors. With good spirits the child is using his unaffected muscles actively and gaining by strides in the power of his weakened muscles, while the more severely damaged show slight change, and those hopelessly paralyzed progressively atrophy.

If an attempt is made to formulate statements of the relative values of electricity, exercises and massage, one must also classify the cases to which these measures may be applied. If we divide the paralyses of poliomyelitis into three classes, varying only in degree, at once we have a better basis for determining measures to be used or rather, perhaps, for summing up the value of those employed up to the time of recovery, or the time progress toward recovery ceases.

First are the cases with weakened muscles, and in this class the order of value in treatment is (1) Voluntary exercises, (2) electricity, (3) massage.

Second are the cases with paralysis, moderate atrophy and reaction of degeneration; in this class the order of value in treatment is (1) Electricity, (2) massage, (3) passive exercises.

Third are the cases with absolute paralysis, complete reaction of degeneration, extreme atrophy and cold extremity; in this class of case the order of value in treatment is (1) Massage, (2) passive exercises, (3) electricity.

In the treatment of the paralyses the goal is to save the motor neurons from damage; if damaged, to restore these neurons to health partially, if possible completely; if the neurons are destroyed, to make up the loss by ingenious adjustment and mechanism. All these efforts are to save, restore and supply functional use.

These measures may be kept up with benefit for a year or more, as the limit of improvement which is a part of the recovery from the disease ceases probably inside of two years from the onset.

With the cessation of improvement there is the condition of permanent crippling to be considered. Much help can be extended to the patient by the orthopedist. Apparatus ingeniously contrived can improve the patient's walk; operations benefiting relaxed ligaments may lessen the separation of joints; arthrodetic operations and tendon and nerve transplantations may partially restore functioning powers to members severely crippled.

The disordered nutrition accompanying the paralysis in poliomyelitis renders the recovery and results from operative procedure less sure than in the operations on healthy bones, muscles and tendons.

In conclusion, let me call attention to the fact that wide as is the range of pathological damage to nerve structures in poliomyelitis, it is in only one group of neurons that the harm done calls for therapeutic measures during convalescence and the later stages of the disease. The meninges, the sensory columns, perchance, every columnar tract of the cord, the peripheral nerves, may all be involved as well as the anterior cornual cells and higher motor nuclei, but treatment has to be considered in a practical way only in the conservation of these motor neurons.

### DISCUSSION.

DR. R. W. LOVETT called attention to the fact that epidemic infantile paralysis was not altogether new in this community, but that in 1904 there was an epidemic of 136 cases in Rutland, Vt., which did not spread throughout the country. He had, therefore, looked into certain general conditions as possibly accounting for the increased spread. Occurrence of a great epidemic in Norway and Sweden in 1905, followed by the large epidemic in New York in 1907 and the epidemics in Massachusetts, Kansas, Nebraska and Minnesota in 1909, suggested that possibly the disease was brought to this country by immigrants.

The total immigration to this country rose between 1904 and 1907, after which it dropped, but Scandinavian immigration dropped in 1905, 1906 and 1907 from the figures of preceding years, and in 1907 — the year of the New York epidemic — there were a smaller number of Scandinavian immigrants than since 1901.

Considering other factors of possible importance, — in 1904 the railroads were carrying 46 passengers per train mile, and in 1908 they were carrying 54 passengers per train mile, but the increase was even more marked in electric railway travel, the number of passengers carried increasing between 1902 and 1907 by 4,000,000,000. Automobile traffic also has increased very much. In 1905 there were 4,800 automobiles registered in Massachusetts, and in 1909 there were 24,000 registered; that is, in the period between these years, the number of automobiles in this state increased five times. It is, therefore, evident that travel is very much more common now than it has been in preceding years.

An investigation into the amount of fruit used

was not significant. With regard to the question of dust, although on the Massachusetts coast the rainfall was much less in the last five years than it was in the five-year period ending in 1904, the rainfall in the West in the last five-year period was greater than that in the preceding period, and in New York the rainfall is the same in the two five-year periods.

The State Board of Health intends in the near future to take up the question of the prevalence of insects in relation to the spread of the disease.

The disease as it has occurred in Massachusetts has now been under observation by the State Board of Health for four years, and there are one or two matters that may be of interest. The disease on the whole has affected river valleys more than the coast towns. Although it has been stated by writers on the subject that localities severely affected one year were likely to be immune in the following year, from the experience in Massachusetts this can only be applied to small communities. If a large territory like a state is considered, increased prevalence of the disease in one year is followed by a diminished prevalence in the next year, but not by immunity. A town or city, however, severely affected one year is practically immune the next, as shown by the number of cases in Boston, where there were 299 cases in 1909, and a report of only 11 in the first eleven months of 1910.

The disease seems to occur unaccountably both in communities which have been immune previously and in communities which have been moderately infected. There were two epidemics in 1910, one in Springfield, which had had almost no cases up to this time, and one in Fall River, which had shown each year a few cases of the disease. The part of the state that has suffered least is a part running north and south the whole depth of the state, beginning a few miles east of the Connecticut River and ending east in a line running north and south about through Concord, Mass.

The transmissibility of the disease is admitted by all modern writers on the subject, and in Massachusetts there have been many instances of what have appeared to be direct transmission and of transmission by a third person.

Dr. Rotch said that to be especially noted in our present knowledge of the disease is that the primary lesions are much more diffuse than was formerly supposed, including the meninges, the white and gray matter of the cord, both sensory and motor tracts, the pons, medulla, the central nerve centers and the brain axis. The number of clinical varieties is also much greater than was formerly supposed. The disease seems to be comparatively new as there is no record of it previous to 1843. The diagnosis of the disease in its early stages is of importance, and the study which Dr. Lucas has been making in regard to this is noteworthy as showing what probably will eventually be accomplished in this direction. The early diagnosis will probably be shown to be much aided by an examination of the blood and also of the spinal fluid. A diminished white count has been found early in the disease as in contradistinction from the usual leucocytosis of an acute infection. The spinal fluid usually shows an increase in amount and a marked cellular increase due to mononuclear infiltration. These conditions decrease rapidly as paralysis appears. Lumbar puncture is indicated, especially in the beginning, in that it relieves pressure and draws off a considerable portion of the infecting material.

## A REVIEW OF SANITATION IN PANAMA.*

BY FRANCIS P. MC CARTHY, M.D.,
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For many years the Isthmus of Panama has held the reputation of being one of the most unhealthful places in the world. Diseases like yellow fever and pernicious malarial fever have been endemic for centuries, with occasional outbreaks of bubonic plague and smallpox, and, together with the omnipresent amebic dysentery, its reputation as a community with the highest death-rate in the world has been justified. The enervating, hot, damp climate has had considerable influence in bringing about and perpetuating the unhealthful conditions, but there is one more potent factor which has kept up these conditions, and that is the constant non-immune population, which has been relatively more numerous in Panama than in any other tropical country.

Yellow fever, which, up to the American occupation, has reaped a grim harvest for centuries, was especially fatal to any newcomers, particularly in the French construction days. The native population have no fear of this disease on account of their acquired immunity from having the disease in a mild form in childhood. The disease has lost its grip at intervals for want of a non-immune population to feed upon, only to break out with renewed vigor with each influx of foreigners to the mosquito-infested zone. No human hand was raised to stem the ravages of this disease, as no one knew the method of dissemination of the dreadful scourge.

Situated about 9° above the Equator, Panama is in the tropical belt. The rainfall is one of the heaviest in the world, differing markedly on the opposite sides of the Isthmus. The rainfall on the Pacific side is about 72 inches per year, while on the Atlantic about 130 inches per year. This difference is due to a high range of hills which cross the Isthmus at Culebra and act as a watershed. Last year in Colon, the rainfall totalled 244 inches, the heaviest recorded in the Isthmus, and probably the heaviest in the world. Over 40 inches fell during the month of November alone. The temperature averages during the day about 80 to 90°, rarely going above 90° in the shade, although in the sun it ranges as high as 120 to 130°; however at night there is a decided drop, the temperature averaging between 66 and 70° from sunset to sunrise. The humidity is relatively very high, averaging almost 90%, and this constant high humidity, together with the high temperature, makes the climate of the Isthmus so enervating.

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On account of the extreme dampness everywhere present, clothing becomes mildewed over night, and foods quickly perish unless kept in dry places. The discovery of gold in California, and the lack of a safe and rapid transcontinental route of getting to the scene of operations, induced many thousands of treasure hunters to attempt the Isthmian transit. During the seven and eight years succeeding the discovery of gold, it is estimated that twenty-five thousand passengers annually crossed the Isthmus on pack mule trains. The mortality from disease among these travelers, considering the few miles traversed, was appalling, and to-day we have mute testimony in the number of graveyards scattered along the line of the Panama railroad.

About this period the construction of the Panama railroad was under way, from 1851 to 1855, and after those four years of the most heroic work the road was completed, but at a tremendous sacrifice of human life. Many interruptions occurred during these years, chiefly due to wholesale desertions among the laborers, who comprised West and East Indians, Chinese, Europeans and Americans, as a result of the inroads of the Isthmian fevers among the men. One often hears the remark that there was a life sacrificed for every tie across the Isthmus. During the French régime from 1883 up to the time the Americans took possession the unsanitary condition of the Isthmus of Panama is well shown by the awful death toll among the heroic workers of those days. The one obstacle which contributed more to the failure of the French in the construction of the canal was the high mortality from disease among the force at work. Situated on the beautiful hill of Ancon, overlooking the city of Panama, the French company constructed an excellent hospital which is used to-day by the Isthmian Canal Commission. The records of this hospital were well kept, and a good idea can be had of the mortality from yellow fever among the employees of the company. In nine years during the active period of work 1,041 patients died of yellow fever in the wards of Ancon hospital.

The construction of the canal was done by the contract system, and all patients were charged $1.00 per day for treatment in the hospital. As a result the majority of the sick were not treated in the hospital, as it was cheaper for the contractor to discharge them. Again, the hospital did not have a good reputation among the non-immunes, as a good many patients contracted yellow fever in the hospital. Everywhere in the grounds millions of mosquitoes were constantly breeding in the pools of water and the rank vegetation which was allowed to grow wild, but grimmest of all is the story of how mosquitoes were bred in the very wards of the hospital.

In the French days the patients in the wards were fearfully plagued by ants, which swarmed everywhere, causing much annoyance. To remedy this nuisance bowls of water were placed under every bed post, every chair leg, in fact, everything that touched the floor in the hospital. No heed was taken of the stegomyiæ larvæ contained in these bowls of water, no oiling was done. If they had set about devising a way of spreading yellow fever, they could not have hit upon anything more deadly than that.

The stegomyia mosquito is more of a house mosquito than the anopheles, and as the French depended almost solely for their water supply on rain water collected in barrels and cisterns, they were again breeding mosquitoes practically in their own households. The French averaged about 1,600 white employees on their rolls, and considering the number of deaths from yellow fever in Ancon hospital in nine years as being about one half the number of deaths from that disease, this would give a mortality of over 2,000 deaths from yellow fever among the French. This means that they lost five fourths of their force in five years.

These losses are put at a low figure, for from the survivors of small parties who worked on the canal in those days, a fearful loss of life is shown. The family of one of the chief engineers lost four from yellow fever, the family consisting of five; three out of five died in the family of the superintendent of the railroad. Out of a party of seventeen engineers, sixteen died of this disease; three doctors died from this in one week at Ancon hospital, two in one day. Of a force of twenty-four Sisters of Charity who came from France to supply the rapidly depleting nursing force of Ancon hospital, twenty died of yellow fever. It is estimated that one third of the Frenchmen who came to Panama died of this dread plague.

One of the construction camps now in use was built by the French. Of the first detail sent there to live, all contracted yellow fever with its consequent high mortality. All the furnishings of the house were destroyed, the house was thoroughly fumigated, new furnishings put in and the same thing happened again. After a third attempt the camp was abandoned. No one considered the swarming mosquito breeding amongst them. Yet in spite of these frightful losses by yellow fever, malaria and other tropical conditions, they excavated eighty million cubic yards out of the canal prism, completing about one quarter of the work. It is conceded by the American engineers that the French engineers did excellent work. The remarkable perseverance under the most adverse conditions have stamped their efforts to construct the canal as being really marvelous.

When the United States took possession, in 1904, there was very little yellow fever, as there was a non-immune population. On the other hand, malarial fever was very prevalent, the large majority of the native population harboring malarial parasites in their blood, in one village over eighty per cent of the population. It was recognized at the outset that the Panama Canal could not be constructed by the Americans unless the Isthmus was made reasonably healthy so that Americans could live there. So long as the health conditions remained bad it was impossible to keep a suitable laboring force on the Isthmus, not only on account of the present sanitary conditions, but

because the Isthmus had a world-wide reputation for unhealthfulness in times past.

To Col. W. C. Gorgas, U. S. A., was intrusted the organization of the sanitary department, as he was recognized as an expert on sanitation chiefly on his record in stamping out yellow fever in Havana in the remarkably short period of eight months. The three most important branches of the work in Panama were the eradicating of yellow fever, the controlling of malaria and the rigid quarantining of bubonic plague, yellow fever, cholera and smallpox. In July, 1904, a few months after the Americans took charge, the first case of yellow fever occurred in a white employee of the police department, who died. No other cases were reported for about a month, then eight cases developed in the city of Panama, practically all among Americans.

In January, 1905, the disease broke out in Colon, on the Atlantic side, and nineteen cases were recorded in the two cities during the month. For the next few months there was no alarming increase until the maximum was reached in June, when sixty-two cases developed. There was a gradual decline until Dec. 11, 1905, when the last case was reported in Colon. In all there were two hundred and forty-six cases and eighty-four deaths, the disease being confined to the cities of Panama and Colon. Since that time there have been two or three cases of yellow fever on the Isthmus, but these cases have been kept in quarantine, and no epidemic resulted. It took eighteen months to stamp out yellow fever on the Isthmus, and the work was pushed with the greatest vigor from the start. The city of Panama was fumigated as a whole three times, every house was included, besides fumigating each block every time a new case was reported. Over four hundred men were used in the fumigating squad, and two hundred thousand pounds of pyrethrum and four hundred thousand pounds of sulphur were used during that period.

The campaign against malaria was begun in July, 1904, and has continued uninterruptedly to the present time. The results obtained in fighting the disease have also been very satisfying, but necessarily slower on account of the conditions existing. The Americans suffered greatly from malaria in the early days; a vast majority of the employees who went to the Isthmus in the first few years contracted the disease. At one time in Colon hospital thirteen out of fifteen doctors on duty in the hospital had malaria, most of these cases of the ambulatory type. The anopheles mosquito breeds in fresh water where grass and algæ grow, and is principally a breeder in the country districts. It does not fly more than two hundred yards, although it may be carried by the wind much farther. All the breeding places in the immediate vicinity of the camps and villages were destroyed either by filling in or by surface or subsoil drainage, together with a certain amount of oiling. At the same time all houses were thoroughly screened and the beds of the employees were fitted up with mosquito bars. Prophylactic doses of quinine, 5 to 10 gr. daily, were strongly advised to be taken by the men at work. Results from the energetic work against malarial fever soon began to show, and the mortality decreased year by year.

In 1905 the malarial rate per thousand was 514; in 1906 the rate was higher, 821 per thousand, a total of 21,938 employees being treated for malaria. The rate diminished over 50% the next year, and in 1908 but 282 per thousand. Since then the rate has been slightly less, but showing a definite diminution in malaria among the working force. At the present time the vast majority of Americans who go to the Isthmus to work escape malarial fever.

Only three cases of bubonic plague have developed on the Isthmus since American occupation, — one case in 1905, another in 1906, and the last case in 1909, all coming in on boats from South America. Following each case thorough fumigation of the quarters occupied by these patients was performed, and a crusade against rats, the common carriers of plague, was carried out. Rat traps were issued free to all persons who wished them, and a small bounty was placed on each rat delivered to the health department, which agreement is still in effect. In spite of the fact that ports on both the Atlantic and Pacific sides of the Isthmus, north and south, have been infected with bubonic plague, in some places in epidemics, the Isthmus has remained free from an epidemic up to the present time, due to the excellent quarantine which is kept up against the infected ports. This is the one disease which would tend to delay the work on the canal if it should get a foothold in Panama. It is much more feared by the native population, as they are not immune to this disease as they are to yellow fever.

Smallpox has never been a factor since American occupation, as all employees are vaccinated before landing, and only a few cases have been recorded in the early days of the American occupation. Amebic dysentery has been a fairly common disease among the Americans, although proportionately much less than among the Americans in the Philippines. Since the installation of a good water system in all the towns along the canal, police patrols guarding the reservoir, the prevalence of amebic dysentery has diminished to a marked degree. A condition more feared by the Americans on the Isthmus is liver abscess, one of the complications of amebic dysentery. This condition caused about twenty-five per cent of all the deaths among the American employees during the first four months of last year. The occurrence of mild epidemics of typhoid fever from time to time among the negroes, especially about Gatun, has never caused any alarm, as the number of cases and deaths has been small. The disease takes a much milder form there than up here in the temperate zone. Uncinariasis or hookworm disease is still very common among the native population, but the treatment of the condition among them has lessened its prevalence considerably. It is very rare that an American contracts this disease, and as soon as it is recognized is

immediately treated and cured. During the two years 1906 and 1907, a very severe epidemic of pneumonia prevailed among the West Indian negroes working on the canal. About thirteen hundred cases occurred during that time, and the mortality averaged about forty per cent of these cases. The native Panamanian averaged a much higher mortality than the West Indian negroes, being a race with several mixtures, the Indian and negro bloods predominating.

A very complete and interesting line of research was undertaken by the sanitary department to find out any causative factors in the spread of this disease among the negro laborers. The investigation included such physical conditions as might influence the occurrence of pneumonia. Several camps along the line of the canal were examined, going over the houses carefully, examining the modes of living, noting the location of the place, whether wet or dry, the amount of ventilation in each house, whether they were overcrowded, and noting from the books of each district physician the amount of malaria and the number of cases of pneumonia sent to the hospital. The object of this investigation was to examine carefully the places where the pneumonia was very prevalent, and the places where it was least prevalent, to see if there were any conditions in the locality, houses or mode of living to explain the differences. It was necessary if possible to pick out camps which were as nearly as possible under the same physical conditions, such as dampness, elevation, crowding, lack of ventilation, and also as regards the presence of malaria, to see if any of these factors seemed to come in as causative or preventive of the epidemic of pneumonia.

The result of this investigation gave some interesting negative findings. The epidemic of pneumonia was not affected by the season of the year, as in 1906 it was worse in the wet season, while in 1907, in the dry season, it was much worse than in the wet season of 1906. It made no difference in the rate whether the camp was located in a high altitude or in the valleys, and lack of cleanliness, overcrowding, exposure to draughts or living in houses without any ventilation seemed in no way to affect its prevalence. The malaria rate also had no effect on the frequency of the pneumonia cases. One factor alone seemed to bear any relation to the disease. Pneumonia was inversely prevalent with the length of stay on the Isthmus. By dividing the commission employees into those who had been on the Isthmus over three months and those who had been on the Isthmus less than that time, it was found that the proportion of cases among the second class was considerably greater than in the first, about five to two. The recent arrivals showed considerably more susceptibility, probably due to two factors. First, that the newly arrived laborer did not know how to take care of himself, and, secondly, he was almost certain to be attacked by the grippe, which was very prevalent on the Isthmus at the time, while the older men, having passed through the influenza period, were less liable.

I might say in relation to this disease that, associated with a large number of pneumonia cases, and recognized at autopsy, were rhinitis and sinusitis. The sinuses were involved in about sixty-one per cent of the cases coming to autopsy, the pneumococcus being found in most of these cases in the purulent exudate.

There is one disease on the Isthmus which is causing more deaths than any other condition at present, namely, tuberculosis. The negroes and the native Panamanians, on account of their racial susceptibility, their methods of living in overcrowded houses, the disease has continued unchecked and is at present a big factor in the mortality statistics. This disease runs an especially acute course, averaging about six months from beginning of symptoms until the death of the patient.

The sanitary department have two large terminal hospitals, one at Ancon, the other at Colon, with small dispensaries and hospitals along the line of the canal which feed the two main hospitals. The patients are sent in from the line on the hospital cars which are a part of every regular passenger train that crosses the Isthmus. In any emergencies special engines and trains are always available for the transportation of the sick or injured to the hospitals. There is a force of about one hundred physicians, about fifty of whom are located in Ancon and Colon hospitals, and the rest along the line of the canal in the smaller dispensaries. Besides the force of physicians and nurses, there are sanitary inspectors connected with stations along the line of the canal, whose duties are to superintend the cutting of the brush, draining of swamps, oiling of mosquito-breeding areas and fumigating infected houses.

The largest hospital on the Isthmus is Ancon hospital, established by the old French company in 1883, and added to by the Americans. It is situated just outside the city of Panama, on the northern slope of Ancon hill overlooking the Pacific Ocean. It covers an area of about eighty acres and comprises ninety-six buildings, most of which are of frame construction, and thoroughly screened. The hospital including the insane asylum has a normal capacity of 1,170 and a maximum capacity of 1,350 beds. All employees are treated free, and the members of employees' families are charged one dollar a day. The hospital in every way compares favorably with any large city hospital in the United States, having forty-nine wards, twenty-three of which are for medical cases, eight for surgical, three eye and ear, one tubercular, one isolation and eleven insane. There is an excellent large operating room, equipped to handle any number of cases, also an x-ray outfit, and a board of health laboratory. The medical staff consists of twenty-five physicians and seventy-five nurses.

Colon hospital, which adjoins the city of Colon, faces the Caribbean Sea and comprises forty frame buildings. The greater number of these wards are built on brick and concrete pillars on a coral reef which is covered by the sea except

at low tide. The capacity of the hospital is about one half that of Ancon hospital, namely, about six hundred beds. The medical and surgical organization is similar to that at Ancon hospital and the equipment is practically the same. The staff consisted of sixteen physicians and forty nurses.

Taboga Sanatorium, situated on the island of Taboga, in the Pacific Ocean, is for white employees who are convalescing from sickness contracted on the Isthmus. Here on the island convalescents may stay from one to two weeks until they are ready to resume work.

The mortality rate shows a definite reduction from year to year. In 1904, when the population was small, we had a death-rate per thousand of 52; the following year a somewhat higher rate, about 65 per thousand, and in 1908 it had dropped to 24 per thousand; last year, 22 per thousand, corresponding favorably with the mortality in any of our large American cities. A constant and absolute medical supervision has brought about these remarkable results in the health conditions on the Isthmus, and eternal vigilance is necessary to preserve such conditions.

While working in the American medical wards at Colon hospital in 1908, I was impressed by the large number of neurasthemic cases among the American employees. The continued high humidity, the exposure to the hot tropical sun while working in the open, has a good deal to do with the prevalence of neurasthenia among the Americans at work on the canal. Most of these patients required at least a week of absolute rest and quiet in the hospital, and another week to convalesce at the government sanatorium at Taboga Island.

American women do not seem to tolerate the climate of the Isthmus well. One of the most common symptoms noted is menorrhagia, and neurasthenia is common after a prolonged stay of two years or over. These facts justify in my opinion, that, despite the marked improvements in sanitary conditions which are bound to follow the example of the United States on the Isthmus of Panama, the climatic conditions alone are enervating enough to prevent the white race from ever getting a permanent foothold on the tropical regions, and dispute the claims made by some of our sanitarians that the tropics will soon be a paradise for the white race.

## SOME OF THE MORE IMPORTANT DISEASES OF THE UPPER ABDOMEN THAT MAY REQUIRE SURGICAL INTERVENTION.*

BY JOHN W. KEEFE, M.D., PROVIDENCE, R. I.

EVERY practitioner of medicine meets with numerous cases that present symptoms referable to derangements of digestion and for want of a more accurate diagnosis are called dyspepsia, attacks of indigestion, bilious attacks, *et cetera*.

I shall call to your attention the symptoms and signs of some of the diseases most frequently met with in the upper abdomen in order that we may be better able to locate the lesion present and learn something of its characteristics, thus enabling us to formulate a logical line of treatment.

One may be able to make a correct diagnosis of any of these diseases if an accurate history is obtainable and the typical symptoms and signs are present. We may have more than one diseased condition present, as frequently infection of the bile tract secondarily involves the pancreas. Then there are cases where many of the characteristic symptoms are wanting, rendering it impossible to make a correct diagnosis.

Diseases of the upper abdomen should be looked at both from a medical and surgical standpoint. It is very natural that the internist should have a different viewpoint from the surgeon. A surgeon has the advantage of seeing the pathological changes that have taken place in the living subject, besides having an opportunity of knowing the history of the case and making a physical examination. The internist could add to his knowledge of disease by attending operations upon his patients and seeing the marked pathological changes that have occurred with perhaps but few well-defined symptoms present.

A number of diseases considered but a few decades ago as amenable only to medical treatment we now know can be relieved or cured by surgical intervention. We know that an ulcerated area in the stomach or duodenum may undergo a malignant change. This should be an argument for us not to think too lightly of ulcer, but to attempt early and radical operation where medical treatment has failed to give relief. If we have definite evidence of chronic ulceration of the stomach or ulcer of the duodenum, infection of the biliary tract, or pancreatitis, methods for surgical relief should at least be carefully considered. Personally, I should prefer an abdominal section if medical treatment had been of no avail, and give a competent surgeon an opportunity to render surgical assistance should relief be possible.

Hyperacidity and pyloric spasm and motor insufficiency are regular accompaniments of ulcer of the stomach or gastric ulcer. Twenty-five per cent of both acute and chronic gastric ulcers treated medically die from perforation, hemorrhage or cancer. Gastric ulcer is also prone to recur. Chronic ulcer is frequently followed by carcinoma. Gastric ulcer has been shown by autopsy findings to have run its course and healed without producing any recognizable symptoms during life. The cardinal symptoms are vomiting of blood or its passage with the stools.

*Disturbances of digestion.* — The symptoms are vomiting, epigastric pain and tenderness, hyperacidity, hematemesis or melena, namely, the passage of dark tarry blood with the stools. In chronic ulcer of the stomach the patient suffers pain upon the entrance of food into the stomach. Motor insufficiency of the stomach occurs in the later stages of the disease. Ulcer of the pylorus may be accompanied by obstruction of the same due to the cicatrical contraction which takes place about a chronic ulcer, and should this be

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marked, symptoms of motor insufficiency may follow.

In gastric ulcer there is usually a greater amount of HCl than that normally present in the stomach. The many exceptions, however, to this rule renders it of value only when considered in connection with other symptoms and signs.

The physical signs are localized tenderness in acute ulcer. In chronic ulcer there is tenderness on deep pressure. There is a sense of resistance felt should there be infiltration about the ulcer. The inflammatory infiltration about the pyloric end of the stomach may be palpable in thin subjects, but a mass that can be felt is usually more likely to be carcinomatous in character. When the peritoneal coat of the stomach is involved, we may have adhesions to the abdominal wall, and subsequently an intramural abscess.

Adhesions to the duodenum, colon and pancreas may result from gastric ulcer and there may be a sense of resistance on abdominal palpation. When a gastric ulcer perforates into the general peritoneal cavity the patient complains of a sudden severe pain over the region where the perforation took place. Shock follows; the pulse is rapid and feeble; the countenance is pale, pinched and anxious. The breathing is rapid and shallow. The abdominal muscles are rigid and hard to the touch. Vomiting is an early symptom. The pain and tenderness at first localized over the site of the perforation later becomes general. The abdomen which was retracted becomes distended. In the course of five or six hours we may have a diffuse peritonitis. Perforation may be the first symptom of a gastric ulcer. Immediate operation should follow early recognition of a gastric perforation. The location of the greatest point of pain and of tenderness on pressure soon after the perforation takes place is the most important sign in the differential diagnosis.

The greatest point of tenderness is usually found over the right or left rectus muscle above the umbilicus. Should diffuse peritonitis be present, the previous history of the patient may be of aid in making a diagnosis, but usually the patient is so ill that a good history is unattainable. The probable diagnosis can then be made of a peritonitis following a perforation of some hollow viscus, namely, the stomach, duodenum, gall bladder or appendix.

Patients usually arrive at our hospitals without a written description of their illness either by their physician or friends. The patient, on account of his illness or not understanding our language, may be unable to give a description of his sickness and the hospital physician is at a disadvantage in making a diagnosis.

This lack of a correct history may result in the death of the patient. You can readily see that if a diagnosis of appendicitis or salpingitis is made when the diseased condition is a gastric perforation or acute hemorrhagic pancreatitis, an unnecessary operation which discloses a normal appendix or fallopian tubes may be sufficient to hasten the death of the unfortunate patient, while a history of the case by an intelligent observer, especially the conditions present in the early stages of the disease, may be the means of saving life. The physician who sends a case to the hospital should feel that it is his duty to his patient to write a concise history of his illness and send it with the patient to the hospital. The physician can usually, through the patient, family or friends, or perhaps with the aid of an interpreter, obtain a satisfactory account of the illness, and this should be properly attended to if we have the love we should have for our fellowman.

The anatomical situation of the duodenum in relation to the adjacent organs renders a diagnosis of ulcer of the duodenum difficult. These ulcers occur most frequently in men from thirty to sixty years of age. There is usually a history of dyspepsia covering a long period. One of the earliest symptoms is vomiting, which occurs several hours after the ingestion of food, usually from two to four hours. The vomitus is acid, chyme, and rarely contains blood or bile. Vomiting affords immediate relief. The tongue is clean and the appetite good. The pain is located to the right of the median line just below the gall bladder and does not radiate around to the back; it comes on suddenly and is colicky in character. The most reliable of all symptoms is the appearance of blood in the stools. The blood found may be fresh or dark and tarry in appearance, showing evidence of digestive changes. Jaundice may be present, due to inflammatory edema, which obstructs or distorts the common duct.

Perforation is the most frequent and dangerous complication of duodenal ulcer. The pain is usually greatest in the right hypochondrium, but it may pass down to the right iliac fossa. Shock, as a rule, is not present, and if it occurs it is not usually severe. The peritonitis which follows perforation extends from above downward.

We should cease telling our patients that they are suffering from the presence of gallstones, as at operation we may find no gallstones present. Infection of the bile tract is a better and more correct term to use. The gallstones when present are always preceded by infection and subsequent inflammation of the bile tract which causes retardation of the flow of the bile and precipitation of the bile salts. Both typhoid and colon bacilli have been found in gallstones, and gallstones have been caused to form in the gall bladders of rabbits by the injection into the gall bladder of a rabbit, typhoid and colon bacilli, streptococci and staphylococci.

While we know that after the formation of gallstones these may cause ulceration and obstruction of the bile passage, we must remember that we can have the same symptoms produced by swelling of the mucous membrane of the bile ducts, due to infection and inflammation without the presence of stones.

What is commonly called biliary colic is frequently due to distention of the gall bladder caused by obstruction of the cystic duct due to swelling of its mucous membrane or plugging

with thick and viscid bile. A number of times while irrigating a sinus leading to the gall bladder I have caused severe pain by distending the gall bladder with the normal salt solution and the patients have said that the pain was exactly similar to that which they had experienced before operation. I have seen many cases where the patient had what is known as gallstone colic and at operation showed only an infection of the bile tract with no evidence of gallstones.

Let us be contented, then, with a diagnosis of infection of the bile tract and say nothing as to the presence of gallstones. It is as necessary to relieve this condition by drainage of the gall bladder and so prevent the formation of gallstones as it is to remove gallstones and drain the bile passages.

Infection of the biliary passages usually occurs in obese and phlegmatic individuals. The pain, paroxysmal in character, more often occurs at night and has no relation to the ingestion of food. It is greatest over the region of the gall bladder in the right hypochondrium and is referred to the back and shoulder under the angle of the right scapula. There is definite local tenderness over the gall-bladder region. The vomiting is copious and recurring. A chill frequently ushers in the paroxysm and is followed by an elevation of temperature. The chills and fever may recur and give rise to an erroneous diagnosis of malaria. The pulse is often abnormally slow. Jaundice may or may not be present, depending upon the presence or absence of obstruction in the hepatic or common ducts. Marked disease of the gall bladder with or without stones may exist without the presence of jaundice. There is muscular rigidity of the right rectus muscle, and at times a tumor may be detected in the region of the gall bladder. We may have a history of previous attacks and a stone may have been found in the stools. Although a stone may be found in the feces, others may yet remain in the gall bladder.

Diseases of the pancreas have a close relation to infection of the bile tract and as a rule are preceded by such infection. Drainage of the gall bladder will, in consequence, frequently relieve disease of the pancreas.

*Etiology of pancreatitis.* — The relative positions of the pancreatic and common bile ducts, and the frequency with which the bile channels become infected, and the subsequent tendency to the formation of biliary calculi, renders the pancreas vulnerable, most commonly at the ampulla of Vater. The most common cause of pancreatitis is some infection of the biliary tract. Infective material may be carried to the pancreas through its ducts. A gallstone may become lodged in the ampulla of Vater, occluding the outlet for the bile, through the greater papilla, and yet the stone may be so small that it does not completely fill the ampulla, thus allowing the bile to enter directly the pancreatic duct. A stone arrested in the common bile duct, at a point where this duct lies parallel with the pancreatic duct in the head of the pancreas, may so press upon the latter duct as to cause occlusion of the same, thus preventing the outflow of the pancreatic secretion.

Enlargement of the head of the pancreas from any cause may produce occlusion of the common bile duct and produce secondary changes in the bile ducts and liver. Catarral jaundice may be produced in this manner. Infection of the pancreas may occur by way of the blood vessels or lymphatics. Near the head of the pancreas we find that the efferent lymphatics from the gall bladder meet the efferent lymphatics from the pancreas. Intestinal bacteria may enter the ampulla of Vater following the dilation of its duodenal opening by the passage of a stone. Pancreatic calculi may occlude the pancreatic duct and give rise to symptoms. The characteristic pathology found in acute pancreatitis is fat necrosis.

Symptoms of pancreatitis are acute, occasional attacks of indigestion, previous history of infection of the bile passages, sudden excruciating pain in the epigastric region, radiating to the left and through to the back. The pain is more severe than that due to gastric perforation or gallstones. The large doses of morphia necessary to give relief may lead us to think of pancreatitis. Nausea followed by vomiting at frequent intervals occurs, but the material ejected is seldom fecal in character. The sudden seizure is followed by collapse or varying degrees of shock. Frequently there is cyanosis or lividity and the facial expression is extremely anxious. Dyspnea is a prominent symptom, and hiccough may be very distressing. The temperature at the onset is subnormal and may be but slightly elevated even in the later stages. Cases, however, have been reported where the temperature has been high, but this occurs usually after secondary changes have taken place. The pulse-rate is increased and the pulse is feeble; at times it may be scarcely perceptible. There is rigidity in the epigastric region, most marked over the left rectus muscle, and there is tenderness on pressure, most pronounced midway between the end of the ninth rib and the umbilicus. Soon the abdomen becomes distended and is tympanitic on percussion. There is a board-like rigidity over all the abdominal muscles. Deep pressure in the costo-iliac space causes pain. Usually the bowels are constipated, so much so that cases have been mistaken for intestinal obstruction. A mass may be palpated in the epigastric region in some instances. Jaundice may precede or occur during the attack.

There is a leucocytosis present and especially an increase in the polymorphonuclears. Sugar may occasionally be found in the urine, during the early stages of the disease, but usually it is absent. Fat may be found in the feces, which are soft and look like butter, or they may be oily and very offensive. Should the pancreas undergo complete degeneration, the muscle fibers found in the stools contain nuclei. The Cammidge reaction is considered by a number of competent observers to be of no value. Should there be found beef-broth-like serum in the abdominal

cavity, and the omentum and mesentery studded with white or yellowish plaques of fat necrosis, we should at once look to the pancreas as the cause of this condition.

*Carcinoma of the stomach.* — In gastric cancer the vomiting is that of pyloric obstruction. The blood found in the vomitus is of a characteristic coffee-ground appearance. There is loss of appetite, with emaciation and cachexia following. Examination of the stomach contents showing the absence of HCl and the presence of lactic acid is practically conclusive evidence of cancer.

We may be able to feel a growth, or there may be general lymphatic involvement with metastatic growths. With the exception of cancer, and occasionally these cases may be relieved, the other diseased conditions found in the upper abdomen may be amenable to surgical measures. Medical treatment alone may be sufficient to relieve or cure in certain cases, but where medicine has been given a fair trial without giving relief, surgery should be resorted to. Some of these patients will require immediate operation as life-saving measures, while others are not so urgent and yet surgery should not be too long delayed if we wish to effect a cure. The frequency with cancer may follow comparatively innocent derangements is a strong argument in favor of early surgery.

To sum up:

*Ulcer of the stomach.* — Hyperacidity, hematemesis, pain directly after eating.

*Ulcer of the duodenum.* — Blood in the stools. The pain which comes on three or four hours after eating does not radiate to the back. It is localized just below the gall bladder.

*Gall-bladder infection.* — Chills, fever, pain over gall bladder, intermittent in character, nausea and vomiting.

*Pancreas.* — Sudden onset, marked prostration, dyspnea, lividity, cyanosis, intense pain. Upon opening the abdomen, beef-broth-like serum. Areas of fat necrosis.

*Cancer of the stomach.* — Vomitus resembles coffee grounds.

Absence of HCl. Growth may be palpated. Cachexia.

Send a short history of your patient when sending him to a hospital.

Beware of those cases called chronic nervous dyspepsia, et cetera.

Look for some definite pathology of organic disease.

Remember that infection of the bile tract always precedes the formation of gallstones.

## MONGOLIAN IDIOCY.*

BY WILLIAM N. BULLARD, M.D., BOSTON.

THE term "Mongolian idiocy" was first suggested by Langdon Down, in 1866, in an article entitled, "Observations on an Ethnic Classification of Idiots," in the London Hospital Reports (Vol. iii, p. 259), as applicable to a distinct class among the idiots or feeble-minded on account of the supposed resemblance of these patients in facial type to the Mongols or Kalmucks.

It was found on more extended examination of these persons that they did form a distinct class, not in appearance only, but in other characteristics, and they have been for many years distinguished from those afflicted with other forms of mental weakness or idiocy.

At the present time it is possible to state the typical physical characters and distinguishing peculiarities of these defectives more or less clearly. These are as follows:

1. In the first place, Mongolian idiots almost universally show signs of general arrested development. They are small and symmetrically developed but appear, especially during the period of growth, like children two or more years younger than they actually are. Thus a Mongolian idiot of fifteen is apt to present the appearance of a child of twelve or thirteen.

2. Another symptom characteristic of Mongolian idiocy is brachycephaly. The cranium is in these patients not only small and often so disproportionately small as to be technically microcephalic, but it is brachycephalic; that is, the transverse diameter is excessively large in proportion to the shortened anteroposterior diameter. It immediately suggests itself that this condition may have some relation to the shape or size of certain bones at the base of the cranium and may influence or cause some of the other peculiarities, mental or physical, belonging to this type, but no evidence of this has yet been shown. In fact, it seems to be distinctly proved that early synostosis of the tribasilar is *not* the cause of this condition.

3. The occiput is apt to be steep or flat.

4. The face of the Mongolian idiot is usually wanting in intelligence, dull or stupid in expression.

5. One of the most obvious and characteristic signs of this condition is the slanting direction of the eyes, that is, of the eyelids and the space between them. This is almost a pathognomonic sign, yet it is said to occur exceptionally in other forms of idiocy and even occasionally in the otherwise normal Caucasian. This condition is frequently accompanied by an epicanthal fold, and in one of our cases the line of the upper eyelid was so extended as to form a distinct fold above the external canthus.

Strabismus is not rare, but is not distinctive. Nystagmus is said to be often present in the first six months of extra-uterine life. The face is often broadened and flattened; the nose broad, its bridge sunken and the nostrils facing upwards, thus resembling the face of the cretin or cretinoid idiot. In many cases, however, this facial form is not present.

The skin of the face is delicate, thin, easily roughened. The mucous membranes are extremely sensitive and liable to irritations and inflammations, particularly blepharitis and nasal catarrh. It is said that when certain of these

* Read in abstract at the meeting of the American Neurological Association, 1909.
Roentgen plates taken by Dr. A. W. George.



FIG. I. Shows three boys of the ages of eighteen, thirteen and nine years respectively. The middle one, thirteen years old, is a negro. Mongolian idiots.



FIG. II. Shows also three boys with typical faces. Note the peculiar thinness of the skin of the face and the half-closed eyelids, suggesting blepharitis, in the middle boy.



FIG. III. Girl Typical facial expression, more nearly resembling the cretin type.

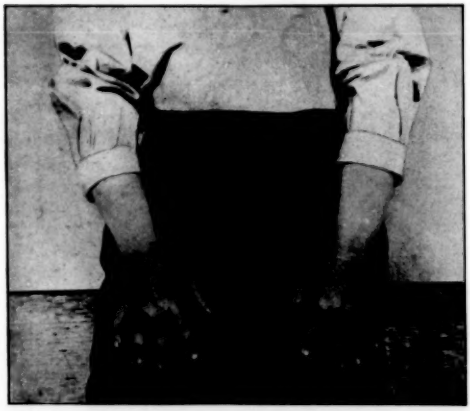


FIG. IV. Typical hands, short, broad and stumpy.



PLATE I. Hand of female Mongolian idiot ten years old. The bones of the carpus are all present, including the pisiforme. The hand is smaller than normal and the bones more slender.



PLATE II. Hand of normal child ten years old.



PLATE III. Hand of male Mongolian idiot seventeen years old



PLATE IV. Hand of normal person seventeen years old.



Plate V. Foot of patient whose hand is represented in Plate I, girl ten years old. The foot is correspondingly smaller than the normal. There is nothing unusual about the structure.





PLATE VII. Normal foot child ten years old.



PLATE VIII. Cranium of ten-year-old Mongolian idiot. Compare Plates I and V, same patient. This cranium is rather under the average size. The sella turcica seems a little larger than the average. The teeth are irregular in size, shape and position.



PLATE IX. Cranium of patient whose hand and foot are shown in Plates III and IV, seventeen years old. Frontal suture wider than normal. Unerupted canine.

patients cry their eyelids swell like bladders and may become everted.

These patients need special protection from cold.

Almost pathognomonic also is the appearance of the tongue, which shows deep, sharp-edged, more or less transverse fissures in its anterior and middle portions. These do not appear at birth; the earliest date of appearance noted seems to have been at twenty-two months. Hypertrophy of the fungiform papillæ is reported. Muir states that palatal deformities occur in 65%.

The teeth are apt to be irregular in size, shape and position.

The thyroid gland is normal.

*Internal organs.* — Congenital heart disease is frequent. Non-closure of the interventricular septum and persistance of the ductus arteriosus are found. No other special anomaly of the internal organs has been noted.

*Laxity of the joints* is most striking. It is apt to be specially marked in the hips. These patients have the habit of sitting tailor-fashion. One of those examined by us used to shut himself up like a jackknife, each foot on the opposite shoulder, and thus sleep at night.

In appearance, the long portions of the limbs do not differ from those of the normal person of the same age except in being often symmetrically smaller. The hands are short, flat and stumpy. There is said to be at times a disproportionate shortness of the thumb and of the fifth finger. Much has been written about the peculiar inward curve of the fifth finger, but this is not always present and, moreover, has been found to occur in other varieties of defectives and in normal persons, and is not characteristic.

The feet are usually normal in appearance except as regards size. They may appear short and stumpy like the hands. The toes may have unusual or irregular proportions in relation to each other. The feet and legs are often cold and blue and show evidence of imperfect circulation.

The deep reflexes were in our cases all normal (25 cases). Fennell reports that out of 20 cases they were brisk in 9, normal in 6 and absent in 5.

Umbilical hernia is not rare.

Bourneville (1903) found in his cases delay in the ossification of the cartilages of the long bones.

*Pathological anatomy.* — Autopsies on these cases have contributed little to our knowledge of their causation, or even of the existing pathological conditions. Wilmarth found an unusual smallness of the pons and medulla, but nothing else peculiar. Shuttleworth says "The brain is characterized by great simplicity of development and by paucity of multipolar cells. The convolutions are large and coarse, and there are few secondary convolutions."

In view of the well-defined symptoms and signs of Mongolian idiocy by which a well-marked case is so easily differentiated, it has seemed to us of interest in our general study of the pathological conditions of bone and cartilage growth and formation as shown in achondroplasia and other allied states to make a careful x-ray examination of the conditions in patients of this class.

My results are based on the x-ray examination of 25 Mongolian idiots from the Massachusetts School for the Feeble-Minded at Waverley, and my special thanks are due to the superintendent, Dr. Fernald, for his kindness in allowing me to make this study.

### DESCRIPTION OF PLATES.

All plates show the part represented *natural size*, excepting Plates VIII and IX, which are reduced.

The Roentgen plates of these cases show chiefly differences in size and stage of development between these patients and normal persons of the same age. There are no characteristic changes of structure such as are found in achondroplasia or osteomalacia. The development, however, has been distinctly retarded and it has seemed that this occurred to a greater degree, the younger the individual. This retardation has shown best in the carpus and the long bones of the forearm. In some cases there has apparently been no development in size or ossification for three or four years. Between the ages of ten and twenty, ossification has in the majority of cases been delayed. In two cases, however, it was more rapid than in the average normal person.

No evidence is shown of change in the structure of the bones, though there is some irregularity at times in the shape of the first metacarpal and of the os calcis. The bones of the head and face appear normal, but the closure of the anterior fontanelle is sometimes delayed. The development of the teeth in all the cases examined has been abnormal either as regards time of eruption or number or position.

The size of the long bones in the majority of cases is *smaller* than normal. Their structure is not peculiar.

## Reports of Societies.

### AMERICAN PUBLIC HEALTH ASSOCIATION.

THIRTY-EIGHTH ANNUAL MEETING, HELD AT MILWAUKEE, WIS., SEPTEMBER 6, 7, 8 AND 9, 1910.

THE Association convened in the Auditorium, with the President, DR. CHARLES O. PROBST, Columbus, Ohio, in the chair.

#### REPORT OF THE JOINT COMMITTEE ON MAILING INFECTIOUS MATERIAL.

DR. JOHN F. ANDERSON, of Washington, D. C., said that the proposed modifications of the regulations of the mailing of infectious material had finally been promulgated by the Post-Office Department under date of April 22, 1910. The committee believed that its efforts had resulted in the promulgation of regulations which were a decided improvement over those formerly enforced. The regulations have been considerably simplified. The committee was successful in having the privileges of the mails for the transmission of infectious

material extended to include federal, state, municipal and other laboratories upon the issuance of a formal permit by the Postmaster-General.

The report of the committee was accepted, and the committee discharged.

### STUDIES ON SELF-PURIFICATION OF STREAMS.

DR. G. F. RUEDIGER, Grand Forks, No. Dak., detailed a series of experiments on this subject, and then presented the following conclusions: Colon bacilli and typhoid bacilli disappeared much more rapidly from polluted river water during the summer months than during the winter months when the river was covered with ice and snow. The destruction of these organisms in the river water during the summer months was in a large measure due to the growth of microscopic plants and other organisms which apparently gave off dialyzable substances which were harmful to the bacillus coli and bacillus typhosus. That such substances were given off by the saprophytic bacteria was clearly shown by Frost several years ago, and his experiments simply confirmed Frost's by attacking the problem in a slightly different way. These effects were lost in the winter as no growth took place after 0° C. The direct rays of the sun also were an important factor and their effects were entirely lost when the river was covered with a thick layer of ice and snow.

The practical value of this investigation was very evident. It explained why some of the northern cities where sewage-polluted river water was used in the water-works system were more frequently troubled with outbreaks of typhoid fever during the winter months. This was illustrated at Minneapolis last winter, and he believed was true at Lawrence, Mass., before the installation of the filter.

When bacteriological analyses of sewage-polluted river water were to be made at the site of a proposed water-works intake pipe, it was important that samples should be collected and analyzed both in the winter and in the summer. Analyses of samples collected during the summer did not give reliable information in regard to the condition of that water when the river was covered with ice and snow. The analyses showed that the pathogenic bacteria from the sewage traveled several times as far in the water under the ice, before they were destroyed, as they would in an open river during warm weather.

#### DISCUSSION.

DR. H. W. HILL, of Minneapolis, Minn., said the experiments which they undertook confirmed in every way the observations and conclusions of the essayist regarding winter river typhoid and summer typhoid. They had found that typhoid bacilli might kill out in going down the river in summer under conditions where they would exist during the winter.

DR. PETER H. BRYCE, Ottawa, Canada, said he noticed in connection with the paper the author seemingly did not take into account the question of sedimentation during the two days in the river. They all remembered Pettenkofer's tests long ago at Munich showed about 90% of all bacteria in water by dilution and by sedimentation had disappeared within a distance of ten miles.

DR. E. C. LEVY, of Richmond, Va., said at the Winnipeg meeting of this Association Dr. Freeman and he presented a joint paper on typhoid fever in the South, with special reference to the disease in Richmond. In that paper they brought out the point which had been explained to-day, but made no attempt to explain why it was water-borne typhoid was especially a disease of winter months, but they proved to their satisfaction that such was the case. Their opinion was arrived at purely and simply from an epidemiological standpoint. They had no laboratory facts to corroborate this. During the years since that time their views had been confirmed in every way to such an extent that in Richmond, after they had passed the winter months, they did not worry about water typhoid.

DR. RUEDIGER (closing) stated he should like to say a word with reference to sedimentation, which was referred to by Dr. Bryce. He did not think the factor of sedimentation would alter the experiments in any way; so far as he could see, there would be as much sedimentation in winter as in summer. This factor need not be considered in this particular study. Another study might be based on the factor of sedimentation, which he believed would be the same in summer as well as in winter.

### THE SANITARY REGISTRATION OF HOUSES IN MEXICO.

DR. JESUS E. MONJARAS, of Mexico City, said the Board of Health in Mexico had made great progress in the sanitary records in that city. The plan of the city showed the houses in which persons had died of tuberculosis. Each house was shown on the plan by a number which corresponded to the number of cases observed in that house, and each one had its separate file containing all the details of cases as well as the work which had been ordered to improve the sanitary conditions of the houses. With this plan they were able to show the number of deaths caused by tuberculosis or any of its allied affections from the year 1891, with the ages and sex of those who died, and the wards in the city of Mexico in which those deaths were recorded. The sanitary registry of the houses, therefore, constituted a necessary institution in all cities, by the aid of which the sanitary and municipal authorities, as well as the general public, could obtain easy and certain knowledge of the houses which constituted foci of infection.

#### DISCUSSION.

DR. FREDERIC TORRALBAS, Havana, Cuba, stated the work the essayist had described had been carried on in Havana for some years. It was the duty of the sanitary inspector to cover the complete history of houses. An inspection was made of from eighteen hundred to two thousand houses a day, so that cases of tuberculosis were easily traced.

### SANITATION OF BAKERIES AND RESTAURANT KITCHENS.

MR. CHARLES B. BALL, of Chicago, stated in their experience with bakeries and restaurant kitchens they were led to the conclusion that new installations of restaurant kitchens were required. Ample space must be provided in which the employees might perform the various operations. The contingency of expansion at a future date should be considered, as the tendency to enlarge the dining room, without providing additional kitchen facilities, was found in a great many cases. The arrangement of the various appliances in their relation to each other should insure the isolation of dishwashing and garbage storage from the handling of food. Adequate provision must be made for the removal of cooking odors, not alone from the ranges, but also from vegetable boilers, so as to avoid nuisance in other parts of the building and in the neighborhood. The Underwriters Association now required that ventilation ducts from large ranges be built of heavy iron plate and carried through the top of the building without any other connections, so that the grease and soot may be burned out of them as from a chimney flue, without incurring fire danger to other rooms. Ample toilet facilities and wash-rooms, separate for each sex and

apart from those provided for the public, must be furnished. The wash-basins should be located outside of the toilet rooms in order that it might be apparent to those in charge that the hands are cleansed after leaving the toilets. Proper locker rooms with exceptional means of ventilation must be provided in order to avoid the nuisance of the storage of either street or working clothes in tightly closed cupboards. Well-ventilated refrigerators were required in numbers sufficient to afford separation for the different classes of food, and especially for milk and butter. The best examples of the application of these rules of design to new bakeshops and kitchens were to be found in upper stories, preferably the top story, of certain high buildings. Such installations of superior type were at present by no means rare.

### PRACTICAL METHODS OF SUPERVISING THE MILK SUPPLY OF CITIES.

Mr. J. Bosley Thomas, of Baltimore, Md., discussed permits for the sale of milk and cream; methods of keeping records; collecting samples and recording results; methods of transporting and delivering milk; communicable diseases; diseases in houses where milk was delivered in bottles; bovine tuberculosis; supervision of dairy farms; butter-fats standards, and said that while there were many admirable methods used by various authorities in the administrative control of the milk supply, there was little or no standardization of these methods. It, therefore, seemed advisable that some representative society or body should appoint a committee to establish or recommend standard practical methods that would be capable of universal use.

### SAVING CHILDREN FROM MILK-BORNE DISEASES.

Mr. Nathan Strauss, of New York, stated that the old city of New York, now the Borough of Manhattan, had established a new record in the saving of the lives of babies. Notwithstanding unusually severe periods of intensely hot weather the past summer, there had been fewer deaths of children under five years than in any preceding summer, and for the first time in the history of the city the summer mortality had fallen to a rate less than 50 per thousand per annum. When he first undertook to protect the babies of New York from milk-borne diseases by supplying pasteurised modified milk, in 1892, the summer saw the dying of 6,612 children under five years, making a rate per thousand per annum 136.1. With the steadily increasing use of pasteurized milk there had been a steady decline in infant mortality, until the summer just ended showed only 3,900 deaths in a population of children larger by 125,000 than that of 1892. In other words, in 1892, 964 children out of every 1,000 survived the summer, while in 1910 there were 988 who escaped death out of each thousand. In his practical experience the saving of children from milk-borne diseases warranted the assertion that the pasteurization of milk supplies of our cities, under careful health department supervision, would infallibly reduce the number of cases of infectious diseases and save lives of babies.

In no way could this Association save so many mothers from grief and loss of their little ones as by hastening the time when efficient pasteurization would be the rule, and when the milk-borne diseases would be as rare as the plagues that medical science had practically abolished.

At the general meeting of the Association, which was open to the public, addresses of welcome were delivered on behalf of the city of Milwaukee by Hon. Emil Seidel, Mayor; on behalf of the State of Wisconsin, by Judge William J. Turner, and on behalf of the medical profession, by Dr. W. A. Batchelor.

The responses to these addresses of welcome were made on behalf of the United States by Dr. Richard Lewis, Raleigh, N. C.; on behalf of the Dominion of Canada by Dr. Frederick Montizambert, Director-General of Public Health, Ottawa, Canada; on behalf of the Republic of Mexico by Dr. Jesus E. Monjaras, Mexico City, Mexico, and on behalf of the Republic of Cuba by Dr. Frederic Torralbas, Havana, Cuba.

### THE PREVENTION OF MENTAL DEFECTS AND MENTAL DISEASES.

There was a symposium on this subject.

Dr. William A. White, Washington, D. C., discussed the preventive principles in the field of mental medicine. The practical things that might be done at once in any community were these: "(1) The securing of legislation that places the responsibility for the care of the insane previous to commitment in the local health office. (2) Every city of one hundred thousand inhabitants or over to have a psychopathic ward connected with its municipal hospital, which is as accessible for the mental case as the other wards are for general medical and surgical cases. This ward should have an out-patient department. (3) The organization of an after-care society to assist persons who have been discharged from a hospital for the insane to get on their feet and to point out to them ways of avoiding the conditions which led to their breakdown. (4) The passage of adequate laws for the control of the labor of women and children. (5) Popular education. By the use of this term I am not merely dealing in a glittering generality that may mean nothing or everything. We have in this country nearly two hundred state hospitals for the care of the insane. These hospitals, each one of them, should be a center of information for the community in which it exists, and its medical officers should use their position to spread information about mental disorders. The superintendent, or a member of the staff, should deliver one or more popular lectures each winter to which the public are invited. Much might be accomplished in this way if all hospitals would do this. (6) Field work from the state hospitals and psychopathic wards as centers to study conditions under which insanity has developed, to furnish assistance to the hospital in dealing with its patients, and to co-operate with the after-care society. (7) More liberal support by city and state of scientific research work in this field, especially along the lines of etiology and prophylaxis.

### THE PREVENTION OF FEEBLEMINDEDNESS.

Dr. E. R. Johnstone, of Vineland, N. J., stated two or three states had passed laws authorizing the unsexing of certain degenerates after they get in institutions, but please note they had to get in the institutions first. He heartily approved of the operation of castration and merely agreed to vasectomy and oophorectomy for want of something better, for after these operations had been performed a fair percentage of the cases might be returned with safety to their homes and thus make room for others in the institutions, but the ideal way was to gather all of the feebleminded into institutions and train them in so far as possible to be self-supporting; plenty of industrial occupation and very little academic training. Thirty to fifty per cent could be made entirely self-supporting after ten years' training. Take the women of childbearing age first and teach them to raise and can small fruits, raise poultry and garden truck, knit underwear, weave rugs, carpets, etc. Then take the others as young as possible, and the economic problem came close to solution. He stated they should not talk, but get to work. The numbers were increasing. If they did not

care for them in well-conducted training schools where they might learn to contribute toward their own support, they must keep them in almshouses, reformatories, prisons and other institutions, and when they were led into evil ways, they had to pay for these patients' arrest, their trial and the damage they had done. If feeblemindedness was to be checked, they personally must do something.

### PREVENTABLE NEUROSES.

DR. C. H. HUGHES, of St. Louis, Mo., stated they had heard a good deal of late about the conservation of forests, which had been a subject of national concern, but what he wished to speak about was the prevention of the neuroses which underlay the physical, the moral and the mental integrity of the people, and which, if not considered and timely regarded, would eventuate in degeneration and degradation of their people, such as have visited the people who had gone before. The neuroses constituted the bane of civilization. It was the neglect to care for a neurosis that caused the greatest of human generals to fall. It was an epileptoid condition, which was neglected, that caused Napoleon Bonaparte to lose the battle of Waterloo. They were for prevention of the neuroses, those conditions of mind and of the nerve centers otherwise that had so much to do with the individual in the community, with the individual on the firing line in the battle of life, and with the individual who had to meet the duties and obligations of their modern civilization, with its strenuous demands; and it was in the prevention of the neuroses, beginning with the cradle and extending up to manhood and through manhood, they had most to do as physicians who wished to conserve the vitality of their race and save America. They must take care of the neuroses because they were the bane of civilization; they were the bane of the family life; they were the bane of the social life. The incongruities and unhappiness that existed in families and revealed so largely in the divorce courts were the product on one side or the other, and oftentimes on both, of the dominance of the neuropathic element in one or the other or both members of the family, and they were called misfits. They were called incompatibilities by lawyers, who could not find a better term, but they were conditions of neurotic ill-adaptability. They were physical misfits. What he meant by the neuroses was not alone functional conditions of the nervous system, because the line of demarcation between functional and organic disease was only a question of time and of study and further observation, but the functional affections of yesterday were the organic troubles of to-day. The time was coming when they would understand hysteria to be an organic disease. Insanity came down to them in its predisposing element in the majority of instances as an inherent predilection, an inherent organic tendency, and superadded to it came the disturbance or influence of environment, the disturbing influences of depressive passion, the influences of conditions of overstrain, overworry, which over-annoy the human mind. They should have a reasonable regard for the powers of the growing child, so that he might not be overstrained. He should have an adequate amount of fresh air, abundant nutrition, ample time for rest, and the prevention of those conditions which came from excesses was the cardinal principle which underlay the prevention and evolution and final destructive development of all neuroses.

### DISCUSSION.

DR. JOHN N. HURTY, of Indianapolis, Ind., stated that if they did save a child from diphtheria or scarlet fever and yet failed to save it from some neurosis, the child was lost just the same. The longer he lived and worked in the science of hygiene, the more he was convinced that there was no hope to work with the adult. They must go back and instruct the child. That being done, they had taken the first step. Under their present form of education they did not do that except to a limited degree. The thought was gradually penetrating their minds that the child must have playgrounds and fresh air. They have been shutting out the air from the schoolroom and calling it economy. They had been buying sites for schoolhouses without playgrounds, and calling that economy, and it was the worst kind of extravagance. Something must be done to prevent the building of insane asylums, taxing the people, raising the rates, and having insane on every hand, and the way to do that was to begin with the child.

DR. HENRY A. NORDEN, of Sturgeon Bay, Wis., stated that, aside from trying to make a living in the practice of medicine, he had been riding a hobby — the education of children. Neurotic conditions were superinduced by night studies on the part of children. He stated you should not blame the teachers; should not blame the school board, but blame the people who were behind them and have them prevent the school board from doing what they should do. It was absolutely necessary, considering the way education was carried on to-day, for the child to study at night or to sacrifice the playtime of the day. It was almost impossible for children to study in school with one section of the schoolroom reciting. He had suggested frequently in his work to cut down the number of hours of school sessions; that they use the school session for the recitations and explanations, and allow a part of the day to be used for pleasure and part for study. In that way they could prevent neurotic conditions that were produced by night studies.

DR. E. C. ROGERS, of Fairbault, Minn., stated wherever there was a family with two feebleminded children, that family ought to be studied carefully, its ancestry gone into and the mental condition of these children studied carefully, and from the work that was now being carried on they hoped to have data which would give them the facts necessary to make statements as to what should be done towards prevention.

### PRESIDENT'S ADDRESS.

DR. CHARLES O. PROBST, of Columbus, Ohio, stated a renaissance in health was at hand. Never before had the public shown such interest and enthusiasm in health measures. Never had it so nearly reached a realization of the immense possibilities in preventing sickness and prolonging life. The time was ripe for co-operation of the widest sort. Without attempting to even outline a plan for co-operation, he recommended that by committee or otherwise the question be investigated of the possibility of uniting or concentrating the efforts of the different national organizations in the four countries represented whose work concerned in any large measure the promotion of the public health. If moral prophylaxis came within the scope of social hygiene, the question of providing suitable amusement for the working people became of greatly increased importance. Especially was this true for working girls. The lack of such places in large cities was among the chief causes of the social diseases. The department of child hygiene of the Russell Sage Foundation, established in 1908, occupied a part of this field. Its purpose in part was to conduct researches and promote activities favorable to the physical, moral and intellectual welfare of children, especially public recreation, and the health and progress of school children. This association stood for the highest possible standards in public health. In various ways it had given weighty support to many

health movements for improving general health conditions, and notably in the interest of pure food and the establishment of a national health department. The family physician must long remain the chief instructor and most potent factor in preventing the spread of dangerous infectious diseases. The strongest nation, the one of greatest achievements, would in the end be the one that gave the greatest amount of intelligent care to the health of its subjects. Eventually all health interests should be administered by the government. If the first step towards the centralization, or at least the co-operation, of the many associations devoted to health problems could be taken at the meeting, it might be the means of hastening the day when every individual would be given time and opportunity for the pursuit of health and happiness, and the certain knowledge of how and where to find them.

### ORGANIZATION OF THE PENNSYLVANIA STATE DEPARTMENT OF HEALTH.

Dr. Samuel G. Dixon, Harrisburg, Pa., said from July 22, 1907, to June 30, 1910, 32,347 poor tuberculous sufferers had received the skilled medical aid and the attention of trained nurses which the department's one hundred and fifteen dispensaries provided. The death-rate from tuberculosis in Pennsylvania had fallen from 134 to 120 per one hundred thousand of population in four years. This meant a saving of 1,000 lives annually. From October, 1905, when the state began its free distribution of diphtheria antitoxin among the poor, down to Dec. 3, 1909, 20,794 cases of this dread disease, mostly little children, were treated with the life-saving serum. They knew by statistics that without antitoxin 42 out of every 100 of these children would probably have died, but with the aid of the state's antitoxin the death-rate among these poor little sufferers was reduced to 8.48. Free antitoxin was also given in 15,125 cases, mostly children, who had been in contact with the disease. All but a very few of these were absolutely protected against diphtheria. A very low estimate of the saving of child life resulting from the state's free distribution of diphtheria antitoxin since 1905 was about 8,000 lives, a pretty good investment of the taxpayer's money. And what of typhoid fever in view of all this work for pure water? In 1906, 56.5 out of every 100,000 people died from this disease; in 1907, 50.3; in 1908, 34.4; and in 1909, 23.9. That is, there were now living 2,363 people who, had the death-rate of 1906 prevailed in 1909, would have died from typhoid. In 1906 and 1907, the death-rate in Pennsylvania per 1,000 of population was 16.5; in 1908, it had dropped to 15.7 and in 1909 to 15.3.

### REPORT OF COMMITTEE ON EDUCATION OF THE PUBLIC AS TO THE COMMUNICABILITY AND PREVENTION OF GONORRHEA AND SYPHILIS.

This report was presented by the chairman, Dr. George M. Kober, of Washington, D. C. The report contained several recommendations, which were referred to the Executive Committee for consideration, and which were reported back to the general meeting subsequently in the following amended form: The committee recommended: "(1) The recognition, study and control of the prevalence of these, as with all other communicable preventable diseases, in order to ascertain the distribution of them. (2) An educational campaign for parents of all social classes and children of all ages and sexes. This teaching should be not only moral, but also medical in the widest sense. (*a*) Proper distribution of circulars, pamphlets and other literature by state health department through all suitable channels. (*b*) State health departments to instruct all its local health officers in sexual matters, and direct them to make a systematic effort to educate the people in their respective communities. (*c*) State health departments to make a definite and determined effort to awaken and interest the medical profession in this fight against venereal diseases. (*d*) State health departments to send out especially trained paid teachers and lecturers of their own, supported by exhibits and lantern slides, to address special meetings of parents, health officers, medical men, teachers and others in schools, colleges, churches, etc., on these and other preventable diseases. (*e*) State health departments to encourage the organization of local leagues or associations whose purpose shall be the support of and control of a crusade against the spread of all communicable diseases, said societies to include every profession and walk of life; to depend on philanthropists for necessary funds rather than upon paid subscriptions for financial support. (*f*) Health departments to interest and provide for the authorities having charge of the educational curriculum in public and in private schools: (1) By introduction of biology into the graded courses of all schools. (2) To provide instruction in sexual matters for students of the upper grades. (3) By special instruction to normal school students who are to become the instructors. To impress upon presidents, deans, preceptors and teachers the necessity of exercising their influence on students in reference to the communicability of syphilis and gonorrhea, and to inculcate a morale of protection among the college fraternities. (*g*) To utilize the public press for the proper occasional presentation of the subject, and to discourage the display of advertising matter which encourages the exposure to dangers in these diseases. (*h*) To utilize church clubs, fraternal societies, trade unions, women's clubs, and especially mother's clubs for instruction of parents. (*i*) Health departments to recommend the enactment of laws for (1) physical inspection and segregation of prostitutes; (2) notification and report (by number, if desired) of venereal cases; (3) physical examination of men before marriage, male applicants for marriage license being required to obtain same to submit to an examination by a duly qualified physician for the purpose of ascertaining whether said applicants are free from venereal diseases; (4) to make it a crime to spread any venereal disease; (5) keeping open free night dispensaries and maintenance of special dispensaries and hospitals for these diseases. (*j*) Advocacy of temperance on account of the relationship between alcoholism and venereal diseases. (*k*) Advocacy of personal cleanliness and venereal prophylaxis. (*l*) Advocacy of early marriage."

These recommendations were adopted.

### VENEREAL DISEASES AMONG SEAMEN OF THE MERCHANT MARINE.

Dr. J. W. Kerr, of Washington, D. C., stated there were treated 1,281,427 cases of sickness from all causes, or an average of 53,392 patients annually. Of the total number, 106,090 were cases of syphilis in one of the three states, 4,420 being the annual average; 117,336 cases of gonorrhea (including gleet), representing an annual average of 4,889 cases; and 39,819 were cases of chancroid (including ulcer of the genitals), or an average annually of 1,569 cases. The total number of venereal cases treated and classified as above during the period mentioned was 263,245, or an average annually of 10,969 cases. It would thus be seen that these venereal cases represented 20.5% of the total cases treated. This percentage it would be understood represented cases of syphilis, gonorrhea and chancroid, and did not include complications or sequalæ of those diseases.

Dr. J. R. Kean, of Washington, D. C., made a

plea for applying the usual methods of preventive medicine to venereal diseases, and, among other things, said he did not think it was either wise or necessary for scientific men interested in the good of the race and of the country to take any part in the discussion of the relation of this evil to society. It was sufficient for them to know the following facts, that the prostitute was a present confrontation of the problem. There was no reason to think that these diseases were beyond the reach of preventive medicine any more than other contagious diseases, and their immunity from restriction must be attributed to the public disinclination to discuss them and legislate concerning them. He hoped that this association would not be deterred by the outcry of certain classes of persons who were accustomed to think with their emotions rather than their brains, from taking the bold stand in this matter which was justified by science, by common sense, and by the demands of the public good.

*(To be continued.)*

## Book Reviews.

*Pneumonia.* A Symposium on the Occurrence, Etiology, Diagnosis, Prognosis and Treatment of Pneumonia. Reprinted from *American Medicine*, April, 1910. Arranged and edited by H. EDWIN LEWIS, M.D. Pp. 182. Published by American Medical Publishing Company, 84 William Street, New York City. 1910.

The articles collected in this volume have already received sufficient attention in the reviews of current literature.

*The Practice of Medicine.* A Guide to the Nature, Discrimination and Management of Disease. By A. O. J. KELLY, M.D., Assistant Professor of Medicine, University of Pennsylvania; Professor of Medicine, University of Vermont. Octavo. Pp. 949. Illustrated. Philadelphia and New York: Lea & Febiger. 1910.

Kelly's "Practice of Medicine" is a valuable addition to our didactic literature. The author has aimed in it to prepare for the student and the junior practitioner the essentials of the subject, unadorned with great detail. In this aim he has been eminently successful. The volume presents a description of practically every known disease, with a terse but adequate discussion of each, well planned to impart with little effort on the part of the reader a clear view of modern medical knowledge. It deserves to be widely used both as a textbook by students and as a handbook for quick reference by the practitioner. The medical investigator may regret the absence of historical considerations and of mention of original work upon which its teachings are based, but these could only be introduced at a sacrifice of that conciseness which is one of the volume's most conspicuous merits. The student and the general practitioner will find included in its pages without consulting other works descriptions and directions for treatment sufficient for the purposes of practical medicine.

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## THE VANISHING BIRTH-RATE OF CIVILIZATION.

AGAIN and again the topic of declining birth-rates in civilized countries rises like a horrid specter to afford prophets of evil a welcome occasion to utter their dismal forebodings. It is perfectly true that at present the birth-rate among highly cultivated peoples, as among all highly evolved forms of life, is low and has for some time been falling. In France it is now only 20.1 per 1,000 of population, less even than the death-rate. In England it has fallen during the past thirty years from 35.4 to 26.6. In New England the birth-rate among native Yankees is already lower than the death-rate, as in France. On the basis of these and similar figures, Prof. Walter F. Wilcox, of Cornell University, at a meeting of the American Statistical Association in St. Louis during the last week of December, made the startling prognostication that in 2015 the total birth-rate in the United States will have fallen to zero. This important statement, if true, would mean the practical extinction of the race by 2100. Extermination is not a pleasant prospect; still, worse things might befall us, and we can at least go down as couragously as the crew of the *Royal George*. If the earth is soon to become as desolately frigid an abode as Dr. Wiley has been describing of late, perhaps the declining birth-rate is a merciful provision of nature for the anesthetic anticipation of our end. Who would wish his children to reap their food and steam-heat from wind-mills and storage batteries, only to perish at last of Arctic cold under an ice-bound Equator? But of course Professor Wilcox's prophecy is not to be taken, and probably was not intended seriously. It may be mathematically correct

(though even here it should seem that the professor had followed arithmetic rather than geometric progression), but it is not humanly true. Perhaps in these days of intense competition among the higher professions, a declining birth-rate may prevent glutting of the market by over-production. Howbeit, even though the birth-rate of civilization seem to be approaching a vanishing-point, it will at least approach that point at an infinitely decreasing speed. There will be an irreducible minimum beyond which the birth-rate, like the incidence of preventable disease, will not fall. It is probably safe to assert that until time makes this terrestrial sphere uninhabitable there will continue to be occupation for the obstetrician and for other physicians.

## DEATH-RATES IN BOSTON AND ELSEWHERE.

There has been of late from various sources considerable discussion of mortality statistics in Boston and other large cities, with comparisons, some favorable, some invidious. It appears that in 1910 both the total and the infantile mortality in Boston were higher than in 1909. The precise reason for this is not apparent, but the fact is in no sense disquieting or indicative of any hygienic or medical backsliding. It must be remembered that the death-rate of 1909 was exceptionally low, the lowest on record in the city. The total death-rate in Boston in 1907 was 18.74 per thousand of population; in 1908 it was 18.40; in 1909, only 16.88. So marked a fall was mathematically certain to be followed by a slight compensatory rise. No declining curve falls steadily without slight oscillations. Moreover, many factors besides disease incidence enter into the determination of the death-rate. One of the most important of these is the racial composition of a community. From a comparison of large numbers of statistics it appears that in our Northern states negroes show the highest percentage of mortality, Italians the next, and the Irish the next; whereas Scandinavians, the Scotch, Russians and Poles have the lowest relative mortality. The proportionately high percentage of Irish, Italians and Ethiopians in the population of Boston, though it would hardly affect the death-rate from year to year, serves to keep that rate higher than in some large cities with a relatively greater proportion of Teutonic and Slavic inhabitants. Boston has no cause to be ashamed of its death-rate, which we may safely expect to show a progressive though diminishing and not always constant decline in years to come.

## TERMINATION OF THE TYPHOID EPIDEMIC AT ANNAPOLIS.

During the past fortnight there have been no fresh cases of typhoid fever in the United States Naval Academy at Annapolis, Md., and the epidemic is now considered at an end. There have been no deaths, and the prognosis of those now convalescent from the disease is excellent. It is encouraging to note that during the course of the epidemic 200 cadets consented voluntarily to receive antityphoid inoculation as a protective measure.

In this connection it may also be recorded that General Wood, chief of staff of the United States Army, has recently issued a general order "directing all commanding officers throughout the service to use their best efforts to induce officers and men in their commands, and all civilians connected with the army, to be inoculated with antityphoid vaccine." Compulsory inoculation is now required of all bodies of troops going into the field for maneuvers or practice marches when the supply of drinking water is unreliable. It is also required of all members of the hospital and army nurse corps. During the past year, among 12,000 persons thus inoculated in the army, there have been 3 cases of typhoid fever and no deaths. Among 50,000 soldiers not inoculated, there have been approximately 300 cases and 30 deaths.

## SOME LARGE BEQUESTS IN MEDICAL CHARITY.

During the past week several large bequests to medical charities in or near Boston have been publicly announced. Among the most interesting of these is one that has just become operative under the will of the late John Ashton, formerly a barber in Boston, who died in 1867. A sum, now amounting to $20,000, which ever since his death has been involved in trust funds and litigation, has just become available and goes to the Massachusetts General Hospital as beneficiary. The Massachusetts General Hospital also receives a further sum of $25,000, and the McLean Hospital at Waverley, Mass., $50,000, by the will

of the late Sarah A. Matchett, of Brookline, Mass., allowed in the Norfolk Probate Court at Dedham, Mass., on Jan. 3. On the death of several private beneficiaries of the same will, the principal of various trust funds under the estate, amounting to over $100,000, will also go to the McLean Hospital.

Among numerous public charitable bequests in the will of the late Mary Lothrop Peabody, of Milton, Mass., filed on Jan. 7 for probate in the Norfolk Probate Court at Dedham, Mass., is one of $50,000 to the Children's Hospital, Boston. The Convalescent Home of the same institution, at Wellesley Hills, Mass., is also given $50,000. The same will also contains bequests of $10,000 to St. Luke's Home for Convalescents, Boston; and $500 each to the North End and South End Diet Kitchens.

It is by the generous remembrance of such persons as these that the medical and other charities of Massachusetts are built up and enabled to maintain their beneficent efficiency.

## MEDICAL NOTES.

APPOINTMENT OF A VETERINARIAN. — Dr. Patrick H. Malowney, of Detroit, Mich., was last week appointed a veterinarian in the Boston City Health Department.

DEATH OF A FAT MAN. — Samuel Harvey, a barber, who died of cerebral hemorrhage last week at Carnegie, near Pittsburg, Pa., is said to have weighed 450 lb. and to have been the heaviest man in the United States.

A CENTENARIAN. — Mrs. Hettie Jenkins, a negress, who died last week at Lancaster, Pa., was locally reputed to have been born in 1793. She is said to have been thrice married and to have had, by her successive husbands, twenty-five children, of whom only one son survives her.

NEW MILK ORDINANCE IN CHICAGO. — Beginning with Jan. 1 of this year, there went into effect in Chicago a new ordinance requiring that every cow from which milk is obtained for the Chicago market must be annually tested with tuberculin. Failing this, the milk must be pasteurized before being offered for sale.

PROPOSED REORGANIZATION OF PUBLIC HEALTH SERVICE. — It is reported from Washington, D. C., that a bill has been introduced before the National House of Representatives to reorganize the United States Public Health and Marine-Hospital Service for the purpose of extending its activities and enlarging its importance.

A TUBERCULOSIS CARAVAN. — It is reported from Indiana that a party of fifty tuberculous persons in that state have organized a caravan, consisting of two automobiles and twelve vans, in which they purpose to make a tour of Kentucky, Tennessee, Virginia, the Carolinas, Georgia, Alabama and Mississippi, traveling by day and camping by night. This novel method for treating phthisis is intended to combine the advantages of open-air life with the benefits of climate and the pleasures of travel.

CHOLERA IN MADEIRA. — Report from Lisbon states that on Jan. 5, 600 more troops of the Sixth Portuguese Light Infantry were dispatched from that city to Funchal to enforce sanitary measures against Asiatic cholera in Madeira. It would seem that the methods adopted in dealing with the epidemic in this island were unnecessarily coercive. One may shrewdly suspect that the new government in Portugal is glad to seize this pretext for sending out of the country as many as possible of the soldiers supposedly loyal to the recently deposed monarchy.

### BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Jan. 3, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 62, scarlatina 36, typhoid fever 11, measles 58, smallpox 0, tuberculosis 55.

The death-rate of the reported deaths for the week ending Jan. 3, 1911, was 16.35.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, Dec. 31, 1910, was 232, against 261 the corresponding week of last year, showing a decrease of 29 deaths, and making the death-rate for the week, 17.96. Of this number 116 were males and 116 were females; 228 were white and 4 colored; 139 were born in the United States, 92 in foreign countries and 1 unknown; 55 were of American parentage, 151 of foreign parentage and 26 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 51 cases and 4 deaths; scarlatina, 33 cases and 1 death; typhoid fever, 9 cases and 0 deaths; measles, 55 cases and 0 deaths; tuberculosis, 52 cases and 22 deaths; smallpox, 0 cases and 0

deaths. The deaths from pneumonia were 46, whooping cough 2, heart disease 32, bronchitis 3. There were 9 deaths from violent causes. The number of children who died under one year was 26; the number under five years, 43. The number of persons who died over sixty years of age was 74. The deaths in public institutions were 81. Cerebrospinal meningitis, 2 cases. Acute anterior poliomyelitis, 1 case.

Of the above infectious diseases the following were non-residents: Consumption, 1 case. Scarlet fever, 4 cases.

Deducting deaths of non-residents, the total is 208 and the death-rate is then 16.10.

Address before Boston Scientific Society. — At the meeting of the Boston Scientific Society on Jan. 10 of this week, Dr. B. L. Arms, of the Bacteriologic Laboratory of the Boston Board of Health, made an address on "Some of the Debts that Man Owes to the Animals."

Additional Appropriations for State Board of Health. — The Massachusetts State Board of Health has requested for the coming year additional appropriations of $3,000 for its food and drug department and $10,000 for the pursuance of its investigations in acute poliomyelitis.

Officers of Homœopathic Medical Society. — At the annual meeting of the Boston Homœopathic Medical Society, held in Boston last week, the following officers were elected for the ensuing year: President, Dr. Samuel H. Spaulding, of Boston; secretary, Dr. William A. Ham, of Dorchester; and treasurer, Dr. George D. Bliss, of Dorchester.

Convictions for Illegal Drug Sales. — In a special report made last week by the secretary of the New England Watch and Ward Society to the directors of that organization, it is stated that during the past fifteen months the society has secured before the courts 109 convictions for illegal sale of cocaine, morphine and opium, principally in Boston.

Suit for Imperfect Extraction of a Tooth. — The widow of a recently deceased dentist in Lynn, Mass., has been sued for $1,000 by a former patient of her husband for pain and expense alleged to have been suffered because the latter failed to remove the whole of an aching molar tooth from the plaintiff's jaw. Such post-mortem litigation is depressing evidence of the fact that a physician's liabilities do not terminate even with his death.

Women as Centenarians. — According to recently published vital statistics of Massachusetts, 13 centenarians died in this state during the year 1909. It is interesting to note that all were women. The oldest is said to have been one hundred and eight. Four were natives of Massachusetts; 4 of Canada; there was 1 each from Rhode Island, Russia, the Cape Verde Islands and Ireland; and 1 whose birthplace was unknown. One of the 13 was single, 11 were widows, and 1 was survived by her husband. The moral of these figures, if any there be, seems to be that widows have a higher expectation of longevity than any other class in the community. Perhaps, however, the facts indicate rather a sort of selective fitness by adaptation, and that if a woman can survive matrimony she can survive anything.

## NEW YORK.

Bequests. — Among the charitable bequests in the will of the late Mrs. Charles W. Rockwell, widow of a New York banker, are the following: $10,000 each to the West Side Hospital and the West Side Sanitarium, and $5,000 to the Taylor Hospital, Scranton, Pa.; $3,000 to the Carbondale Hospital, and $2,500 to the Lebanon Hospital, New York.

Appointment of Dental Consultants. — Drs. H. L. Wheeler, of New York, and W. A. White, of Phelps, Ontario County, have been appointed dental consultants and special lecturers on oral hygiene of the New York State Department of Health. They will give public lectures on the prevention of tooth decay and will consult with local health boards and school authorities on the inspection of the teeth of public school children and the establishment of free dental clinics.

A Centenarian. — Mrs. Abbie Bingham, a negress, of Brooklyn, N. Y., died at the home of a granddaughter on Dec. 23, at the alleged age of more than one hundred and thirteen years, it being stated that she was born on a plantation near Norfolk, Va., on March 5, 1797. Her first husband, by whom she had one daughter, was, like herself, a slave. By her second husband, who died about twenty-five years ago, she had nine children, and of these, only three survive her.

County Hospitals for Tuberculosis. — It is reported from Albany that the boards of supervisors in the various counties of the state

are rapidly establishing county hospitals for tuberculosis, fourteen counties being already supplied with such institutions. In some instances the supervisors avail themselves of facilities which have been previously provided in the county. Thus, Dutchess County is cooperating with the city of Poughkeepsie, and Chemung sends its cases to the Elmira tuberculosis hospital.

MEETING OF SOCIETY OF DIRECTORS OF PHYSICAL EDUCATION. — The fourteenth annual meeting of the Society of Directors of Physical Education in Colleges was held at Columbia University on Dec. 30 and 31, a gathering in which nearly all the principal colleges in the country were represented. Dr. A. Alonzo Stagg, of Chicago, presided, and there were many interesting papers and discussions.

CAMPAIGN AGAINST HOOKWORM DISEASE. — Major Bailey K. Ashford, who since 1908 has been in charge of the Marine Hospital at San Juan, Porto Rico, and whose work against the hookworm disease has attracted national attention, arrived from San Juan on the steamer *Caracas* on Dec. 26. He states that the fight against uncinariasis in Porto Rico was going on in Porto Rico long before the discovery of the disease in the South. Since 1904 there have been 300,000 cases on the island. The campaign against the disease began at Bayamon, where a hospital was opened, but this was afterwards removed to Utuado, which was situated in the worst district. With the limited means supplied, much good was accomplished, but the work received a setback in 1908, when the legislature did not appropriate any funds and a number of dispensaries had to be closed. Since then there has been a gradual improvement in the situation, and foremost in the fight has been Dr. Pedro G. Igaravidez, director of the Service of Tropical and Transmissible Diseases of Porto Rico. "Now," says Major Ashford, "we are well equipped, and our success in combating the disease is very great. This has been accomplished without the help of men of means. At present, conditions in Porto Rico are good, and health and sanitary conditions are of the best."

ROOSEVELT HOSPITAL AND THE COLLEGE OF PHYSICIANS AND SURGEONS. — Dr. Samuel W. Lambert, dean of the Columbia University Medical School, is authority for the statement that there is to be no change in the relations between the school and Roosevelt Hospital on account of the recently announced alliance with the Presbyterian Hospital, although of late years these relations have been growing less and less close. At present there is only one professor of the faculty who is connected with the hospital, although there are still on the staff several officers of lesser rank. Dr. Lambert also states that there is no present intention of giving up the buildings of the College of Physicians and Surgeons, which are located across the street from Roosevelt Hospital. Some time ago a site for a new medical school was purchased in the immediate vicinity of the main buildings of Columbia University, but as that was before the alliance with the Presbyterian Hospital was contemplated, it is the general impression that the new buildings, whenever it is decided to erect them, will be somewhere near that hospital.

MORTALITY. — The weekly reports of the Health Department show that in the month of December the mortality in the city represented an annual death-rate of 17.27, as against 13.87 in November and 17.31 in December, 1909. The corrected death-rate, excluding non-residents and infants under one week old, was 16.28. Among the diseases in which there was an augmented fatality were the following: The weekly average of deaths from scarlet fever increased from 5 in November to 9.75 in December; the weekly average from whooping cough, from 4.25 to 5.75; from influenza, from 3.25 to 22; from epidemic cerebrospinal meningitis, from 2.75 to 6.75; from pulmonary tuberculosis, from 155 to 166.75; from acute bronchitis, from 19.5 to 23.75; from pneumonia, from 94.5 to 185.75; from bronchopneumonia, from 73.5 to 109.75; from organic heart diseases, from 137 to 178.25; from appendicitis and typhlitis, from 8.25 to 11.75; from cirrhosis of the liver, from 16.5 to 27.5; from Bright's disease and acute nephritis, from 108.25 to 120.25; and from puerperal diseases, including septicemia, from 8.75 to 13.25. Both influenza and pneumonia are more prevalent than at this time last year. In the week ending Dec. 24, there was a sudden increase in the deaths from influenza, from 9 in the previous week to 34, while the rise in the mortality from pneumonia has been more gradual. Among the few diseases in which there was a diminished fatality are the following: The weekly average of deaths from typhoid fever declined from 15.25 to 12.25; from diarrheal diseases, from 65.5 to 42.25; from diarrheals under five years of age, from 57.5 to

36.25; from cancer, from 70 to 67.25; and from apoplexy and softening of the brain, from 25.5 to 23.

Free Clinic for Animals. — The New York Women's League for Animals, which was formerly the Woman's Auxiliary of the American Society for the Prevention of Cruelty to Animals, has received a gift from Mrs. Russell Sage of $1,500, which is to be applied to the maintenance of the League's Free Clinic and Dispensary for Animals. This clinic has been in existence for a year, and at it the sick and injured horses, dogs and cats of the poor are treated.

Deaths by Violence in the Streets. — The National Highways Protective Association reports that in the streets of New York, in the year 1910, 376 persons were killed and 930 injured by vehicular traffic. One hundred and fifty-eight of the deaths were due to horse-drawn vehicles, 114 to trolleys and 104 to automobiles. More than half of the persons killed by all sorts of vehicles were children under fourteen years of age, and not more than 40% of these were killed by their own fault.

A Check to Scientific Progress. — The present commissioner of public charities, M. J. Drummond, appears to be a different sort of a man from his predecessor, Mr. Hebberd, who always gave the most enlightened aid to the physicians connected with his department. During the administration of the latter, through the liberality of Mrs. Russell Sage, the Russell Sage Institute of Pathology was established on Blackwell's Island, with an income of $12,000 for the maintenance of its laboratory work. The directors of the institute were Drs. E. G. and Theodore Janeway, Simon Flexner and D. Bryson Delavan and Prof. Graham Lusk, of Cornell University, and Commissioner Hebberd appointed as members of the Scientific Advisory Council of the institute a number of the most distinguished physicians of the city. During their incumbency, the directors of the institute state, their relations with the department resulted in complete co-operation, "which reflected itself in advance in all that made for the good of the city institutions in question, and consequently satisfied the officers of the institute." Shortly after Commissioner Drummond took office, however, these gentlemen were removed and an advisory board appointed which consisted largely of laymen with no scientific knowledge whatever. On account of increasing friction with the present commissioner, whose attitude towards scientific research appears to have been distinctly inimical, and whom he accuses of political methods, Dr. Theodore Janeway, who for some years has been on the medical board of the City Hospital, Blackwell's Island, and who was largely instrumental in inducing Mrs. Sage to donate $300,000 for the establishment and maintenance of the institute, has now resigned from the hospital; and Mr. Drummond has issued an order that, in so far as the institute acts as a city laboratory, its work shall be placed under the supervision of the medical board of the City Hospital. He has also designated a committee, composed of three of this board, to confer with the trustees of the Russell Sage Institute of Pathology, "with the idea of continuing the future pathological work of the institute under such conditions as will be satisfactory to all concerned." What action the authorities of the institute will take regarding this order remains to be seen.

## Current Literature.

### Medical Record.

Dec. 24, 1910.

1. Scripture, E. W. *Neurology in Zürich. v. Monakow's New Theory of Brain Localization. Jung's Psychanalysis and Interpretation of Dreams.*
2. Eccles, R. S. *Immunity Reactions as Products of Natural Selection.*
3. Stewart, A. H. *The Probable Duration of Life.*
4. Berkeley, W. N. *Further Notes on the Treatment of Paralysis Agitans with Parathyroid Gland.*
5. Goldman, A. *Another Case of Pyloric Obstruction.*
6. Williams, T. A. *A Simple Clinical Method for Measuring the Diameter of the Pupil.*

Dec. 31, 1910.

1. Mayo, C. H. *A Consideration of Surgical Methods of Treating Hyperthyroidism.*
2. *Gottheil, W. S. *Experiences with Arsenobenzol.*
3. Gordon, A. *Mental Disturbances following Traumatism; Medicolegal Considerations.*
4. Sheldon, W. H. *Long-Continued High Blood Pressure. Its Results and Prevention.*
5. Kaplan, D. M. *The Approximate Estimation of Protein (Globulin?) contained in the Cerebrospinal Fluid.*
6. Peters, L. S. *Mercury Succinamid in the Treatment of Tuberculosis.*

2. Gottheil's conclusions from a limited experience with arsenobenzol are not as enthusiastic as those of many writers. He finds that its immediate effect may be better in some cases than that of mercury. It must be used with care because of its possible bad effect on the kidneys. It should never be given in office practice; the patient should be carefully examined before it is administered and should remain in bed under observation for several days after. It is indicated in especially severe and malignant cases, in cases where mercury has failed, and in other instances in which there are reasons for unusual antiluetic measures. [L. D. C.]

### The Journal of the American Medical Association.

Dec. 31, 1910.

1. *Butler, W. J. *Enteroptosis in Children.*
2. Eastman, J. R. *The Approximation of Widely Separated Wound Margins.*

3. MOFFITT, H. C., AND SHERMAN, H. M. *Tumor of the Spinal Cord.*
4. *EISENDRATH, D. N., AND STRAUSS, D. C. *The Effect on the Kidney of Temporary Compression of Its Vessels.*
5. HERTZLER, A. E. *Etiology of Epithelioma.*
6. GUERRY, LE G. *A Further Consideration of the Question of Permanent Drainage in Certain Cases of Pancreatitis.*
7. RUNYAN, J. P. *Pathology of Gall Bladder and Bile Tracts.*
8. BAMBERGER, A. *A Case of Diaphragmatic Hernia.*
9. MANNING, W. J. *Accidents Due to Swiftly Moving Machines, and Their Automatic Rational Prevention, especially as concerns Industrial Conditions.*
10. ARMITAGE, E. *Extensive Wound of Eye by Infected Instrument. Recovery with Retention of Vision.*
11. COOPER, C. M. *Cerebrospinal Fluid in Anomalous Character in a Case of Intraspinal Tumor.*
12. NOEHREN, A. H. *Saphenous Varix Simulating Femoral Hernia.*
13. LAWSON, G. B. *Simple Apparatus for Accurately Fixing Blood Slides by Heat.*
14. TAYLOR, O. M. *An Improved Uterine Clamp and Retractor.*

1. Butler considers that the "habitus enteroptoticus" is a congenital or hereditary and not an acquired anomaly in children. Cases of the acquired type are extremely rare. This habitus is more frequent in females. No one sign, such as a fluctuating tenth rib or a narrow epigastric angle, can be depended on to decide the existence of the habitus enteroptoticus in a child at any age. It is the whole picture of the slender body, frail bony structure, thin musculature, long narrow chest and the slightly bulging abdomen that makes the classification and makes it possible to recognize this type early enough in life to institute proper methods for its amelioration.

4. Eisendrath and Strauss, in experiments on rabbits, find that temporary compression of the renal vessels, if continued thirty minutes or less, causes very slight changes in the kidney, but if continued forty-five minutes causes considerable parenchymatous degeneration and interstitial infiltration, and if continued one hour or longer causes marked permanent degenerative changes in the whole organ. [E. H. R.]

### SURGERY, GYNECOLOGY AND OBSTETRICS.
### DECEMBER, 1910.

1. COFFEY, R. C. *Surgical Treatment of Ulcers along the Lesser Curvature of the Stomach.*
2. MCGRAW, T. A. *The Use of the Finger in Rhinoplasty.*
3. *MAYO, C. H. *Ligation and Partial Thyroidectomy for Hyperthyroidism.*
4. HAMBURGER, W. W. *Report of a Case of Brain Tumor, with Impaction in Foramen Magnum following Lumbar Puncture.*
5. PARKER, C. A. *Cerebral Hernia following a Decompression Operation for Tumor of the Brain.*
6. STOWE, H. M. *Indications and Technic of Vaginal Cæsarean Section.*
7. GILLMORE, R. T. *Some of the Newer Conservative Treatments for Pelvic Infection.*
8. DACOSTA, J. C. *The Diagnosis of Post-operative Insanity.*
9. DALTON, H. C. *Sarcoma of the Uterus. Report of a Case.*
10. *HILL, C. A. *The Use of Corpora Lutea in Gynecology. A Report of Twelve Cases in which it was used to allay the Symptoms of Artificial Menopause following Removal of Both Ovaries.*
11. ECHOLS, C. M. *Traumatic Rupture of Pus Tubes causing Diffuse Peritonitis.*
12. LINK, G. *Cæsarean Section for Mechanical Obstruction, Ovarian Fibroma. Report of a Case.*
13. BRANCH, J. R. B. *A Popliteal Aneurysm of Unusual Size.*
14. ALLISON, N. *The Technic of Nerve Alcoholization in the Treatment of Spasticity and Muscle Group Overaction.*

3. Mayo has found that great advantage occurs by the ligation of the vessels, nerves and lymphatics at the upper pole of the thyroid in mild cases of hyperthyroidism and in those seen early. This procedure often brings about a reversion of the disease to its simplest form. This same treatment is indicated in more advanced cases in which changes in the heart, liver, etc., have become serious. In this group improvement is generally very marked and often so favorable that the secondary removal of the larger lobe can later be effected with greater safety.

8. DaCosta's very interesting article emphasizes the following points: Post-operative insanity is more common in women than in men, and less common in children than in adults. A trivial surgical procedure is just as likely to be causal as a mutilating operation. A brain operation may seriously damage the brain, but in spite of this is seldom followed by insanity. The removal of ovaries or testes deprives the system of an accustomed internal secretion and is more liable to be followed by insanity. In all cases of post-operative insanity there is predisposition, hereditary or acquired. The operation constitutes only an exciting cause acting on a predisposed nervous system. Such individuals were in danger of insanity before the operation was performed and would have probably gone insane anyhow sooner or later had some other exciting cause, other than the operation, arisen. A normal, stable, healthy brain will probably never go insane after an operation unless that operation attack the brain, the ovaries or the testes. Insanity that comes on immediately after an operation is probably due to the anesthetic. There is no special mental condition characteristic of post-operative insanity. The commonest condition is acute confusional insanity. Prolonged or acute worry before operation is a very common antecedent of post-operative insanity. This condition is practically identical in nature and mode of genesis with puerperal insanity. Septic cases, other things being equal, are more liable to go insane than clean cases.

10. Hill believes that the use of the extract of corpora lutea in 5-gr. doses three times a day is decidedly beneficial in the artificial menopause due to operation. The severe nervousness is completely relieved and the insomnia lessened in many cases. The extract is harmless, but gives no results in the natural menopause. It is deserving of further investigation. [E. H. R.]

### THE PRACTITIONER.
### DECEMBER, 1910.

1. *LATHAM, A. *The Vaccine Treatment of Bronchitis.*
2. *SHAW, H. B. *The Present Position of the Vaccine Treatment of Pulmonary Tuberculosis.*
3. *V. OFFENHEIM, E. *Vaccine Therapy.*
4. JONES, R. *The Teaching of Insanity to the Medical Student and Practitioner in Relation to the Prevention of Disease.*
5. *CROOKSHANK, F. G. *The Diagnosis and Home Treatment of Scarlet Fever.*
6. *KIRKLAND, J. *Gallstones: Their Surgical Treatment.*
7. KNUTHSEN, L. F. *Ehrlich-Hata "606." Some Remarks on More than One Hundred and Fifty Cases seen in Berlin, Copenhagen, and Hamburg.*
8. MILNE, J. W. *The Efficiency of Blood-letting: A Plea for Its Extended Use.*
9. CHILL, E. A. *Erythromelalgia.*
10. ROSS, S. J. *Blood Contamination in Organismal Disease.*
11. KENT, S. *A Case of Acute Pyelonephritis of Unusual Severity due to the Colon Bacillus but with Alkaline Urine.*

1. Latham contributes an interesting article on the treatment of bronchitis with vaccines. He describes the isolation of the infecting organism from the sputum, the preparation of the vaccine and its administration. Where one organism greatly predominates this is not difficult; where there are several organisms, however, it is best to try one vaccine after another until the proper one is found. He does not believe that the preparation of a polyvalent vaccine can be recommended as a scientific method. (It might, however, be better and far less expensive for the patient.) He gives the details of several illustrative cases. The dose of the vaccine and the

interval between doses are to be judged by clinical symptoms. The object is not to cause any marked reaction, but to continue with increasingly larger doses as long as improvement occurs. It is best to begin with a very small initial dose. Careful clinical records are necessary. The duration of a course of vaccine varies in the individual case.

2. Shaw presents an admirable and clear exposition of the present status of the vaccine treatment of pulmonary tuberculosis. He quotes extensively from German, English and American authorities. The paper is an excellent one and well worth reading by those interested in this subject.

3. Von Offenheim, in a general article, discusses vaccine therapy, its limitations, the opsonic index and its value, and the various methods of administering vaccines. The paper seems to be an open and fair-minded statement of this much-disputed subject.

5. This lengthy paper is largely a detailed discussion of the diagnosis, differential diagnosis, symptomatology and treatment of scarlet fever.

6. Kirkland contributes a lengthy article in which he attempts to cover the entire subject of gallstones and the surgery of this condition. [J. B. H.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 49.

DEC. 8, 1910.

1. HILDEBRAND, O. *Essay on Brain Surgery.*
2. BLUMENTHAL, F. *Atoxyl and Its Derivatives.*
3. MICHAELIS, L. *The Ehrlich-Hata Treatment in Internal Medicine.*
4. OPPENHEIM, H. *My Experience with the Ehrlich-Hata Treatment in Syphilitic Nervous Diseases.*
5. RUMPEL. *Our Experiences up to date with the Ehrlich Preparation "606."*
6. STONE, C. *My Experiences with "606."*
7. KROMAYER. *Chronic Syphilis Cases up to Four Hundred Treated with "606."*
8. **Advances in the Use of the Ehrlich-Hata Remedy.*
9. MACHT, D. J. *Sabromin in Chorea.*
10. EHRHARDT, O. *Inversion of a Bladder Diverticulum as a Complication of Prostatectomy.*
11. BLOS, E. *Results of the Operative Treatment of Hay Fever consisting in Resection of the Anterior Ethmoidal Nerve.*
12. BERWALD, K. *An Instrument for Immediate Heart Percussion.*
13. FROHMANN, D. *Diagnostic Aids in Dental Practice.*

8. In this number of the journal there are several articles on the results of the use of Ehrlich's preparation "606." This article summarises the points which it is well for the general practitioner to know about the preparation. The preparation is now made under the personal supervision of Professor Ehrlich at one factory under the name of Salvarsan. It is a clear golden powder which contains 34% arsenic and when dissolved in water has a strong acid reaction which must be neutralized before injection.

Its use is indicated in all stages of syphilis and in parasyphilitic diseases; also in other diseases known to be caused by spirilla and other parasites; also in a certain number of skin diseases of unknown etiology. It is contraindicated in advanced degeneration of the central nervous system, fetid bronchitis and in people with an idiosyncrasy against arsenic. Other constitutional diseases, such as diabetes, nephritis, etc., do not contra-indicate.

The dose is .01 gr. per kilo of body weight; for women, a slightly smaller dose. Smaller doses used several times are not as effective. It can be given subcutaneously, intravenously or intramuscularly. A description follows of the methods of preparing it for each injection. If the powder has lost its golden color or the ampulla is broken, letting in the air, it should not be used. [C. F., JR.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 48.

NOV. 29, 1910.

1. *HENKEL, M. *Effect of Saline Infusion.*
2. *RIEDER, H. *Chronic Gastric Ulcer and X-Ray Diagnosis.*
3. *SCHENK, F. *Transmission of Anaphylaxis from Father and Mother to Child.*
4. WERTHER. *Experiences with "606."*
5. HAUSMANN, T. *Intravenous Infusion of Arsenobenzol; Technic and Value.*
6. CHERZELITZER. *Experiences with "Ehrlich-Hata 606."*
7. GIOSEFFI, M. *Ehrlich-Hata "606" for Leprosy.*
8. SCHANZ, A. *Orthopedic Treatment of Tubercular Ankles.*
9. GRAF, P. *Traumatic Cysts of the Pancreas.*
10. STÖSSNER, K. *A Case of Myxedema following Pregnancy.*
11. PLOEGER, A. *Technic of Taking Blood.*
12. WIBELEISEN, K. *Treatment of Ataxia.*
13. HIRT, R. *Technic of the Plaster Cast with a Window.*
14. KREBS, G. *An Instrument Case for Injection of "606."*
15. NEU, M. *Adrenin Content of the Blood in Pregnant Women.*

1. Henkel reviews carefully the experimental work done on animals by injection of common salt. From this work some observers showed that salt in large quantities might be injurious. The writer then describes experiments upon humans to whom he gave salt in moderate doses by mouth, subcutaneously and intravenously. Some of the persons were healthy, several were pregnant and a few were convalescing from nephritis. The conclusions are that in no case was there evidence of injury to the kidney or to any other organ, and that convalescence of the nephritic patients was not unfavorably influenced. Diuresis was increased in some of the cases and not in others. Increase of specific gravity of the urine was noted in two cases. It is pointed out that by giving large quantities of weak salt solution, toxins of infection may be diluted and recovery thus promoted; but the writer does not make it clear whether he would prefer salt solution to plain water if water could be taken freely by mouth.

2. The writer discusses the experience of himself and others in the x-ray diagnosis of gastric ulcer and draws the conclusion that it is of little value for the diagnosis of fresh ulcer, but that indurated or perforated ulcers may be recognised by the changes which result in the neighborhood of the stomach, and that for gross secondary changes in the whole of the stomach the x-ray is particularly valuable. It is of value also for distinguishing between ulcer and cancer.

3. It is stated that urobilinuria in scarlet fever is the surest means of detecting parenchymatous hepatitis; and it is advised that tests for it should be made in all cases in view of the possibility that a chronic cirrhosis, analogous to chronic nephritis, may develop. [G. C. S.]

No. 49. DEC. 6, 1910.

1. *SCHLIMPERT, H., AND SCHNEIDER, K. *Sacral Anesthesia in Gynecology and Obstetrics.*
2. *HAMM, A. *Physiological Puerperal Bradycardia.*
3. *MAYER, O. *Treatment of Healthy Carriers of the Bacillus of Dysentery.*
4. KAYSER, C. *Sequelæ of Diphtheria and Repeated Illness.*
5. *BRAUMÜLLER, J. *Toxic Effect of Sugar after a Diet of "Albumen-Milk."*
6. LOEW, O. *Physiological Function of Potassium.*
7. HILDEBRANDT, W. *Urobilin in the Blood.*
8. HAYN, F., AND SCHMITT, A. *Practical Value of the Wassermann Reaction with Reference to Stern's Modification.*
9. HECHT, H. *Reactive Power of the Body and Treatment of Syphilis.*
10. HIRSCH, C. *Ehrlich-Hata for Ocular Lues.*
11. MONTESANTO, D. *Results with "606."*
12. MÜLLER, T. *Treatment of Stiff Knees.*
13. v. STÜRNER, C. *Treatment of Glycosuria.*
14. ZIEGNER, H. *Narcosis with Chloroform Oxygen.*
15. LUCAE, A. *Diagnosis of Unilateral Deafness.*
16. BLUMM, R. *The "Poison-box" of the Official Physician.*

1. The writers base their conclusions on 155 gynecological and obstetrical cases in which they have tried sacral anesthesia. They recommend the method of Gross and Läwen. Summarising, they say that on account of the difficulty of the technic, fat people are unsuitable subjects; that the procedure when well done has caused no serious untoward effects; that the method is applicable for gynecological operations on the external genitalia and for hemorrhoids and for obstetrical cases for repair of lacerations or forceps extraction; and that by this method,

in combination with scopolamin-morphin-sleep, sensitive individuals may be spared the pains of labor.

2. Hamm reports about twenty post-partum cases in which he observed the pulse-rate. He says that in about one case in ten there is a definite bradycardia which he believes to be due rather to vagus irritability than to myocardial change. He intends to pursue his study further.

3. Having had a large practical experience with the subject, Meyer says that as far as present knowledge shows, healthy persons may carry dysentery bacilli for three months, rarely for seven months; and that police supervision offers a practical way of fighting dysentery. Drug therapy has failed to expel the bacilli, but antiseptic precautions carried out after every stool minimize the danger. It is advisable that those who have had the disease should regulate their diet so as to prevent return of diarrhea, and should avoid exposure and fatigue. Bacilli may disappear from the stools for considerable periods and be found again later. Therefore the motions should be examined weekly even if they appear normal. Healthy people who have not had dysentery may for a time be carriers of the bacilli.

5. The writer reports a few cases and points out the fact that when children have been fed on Finkelstein's "albumen-milk" untoward effects may follow the subsequent administration of sugar. [G. C. S.]

BERLINER KLINISCHE WOCHENSCHRIFT. No. 48.

Nov. 28, 1910.

1. *COENEN, H. *Progress in the Pathogenesis and Treatment of Necrosis of the Pancreas.*
2. WOHLGEMUTH, J. *Pathological Action of Ferments.* (To be concluded.)
3. RITTER, J., AND BUTTERMILCH, W. *The Nourishment of Infants in Acute Alimentary Disturbances.*
4. RAUTENBERG, E. *The Electrocardiogram and the Movement of the Heart.*
5. ELMER, H. *Concerning Gastroscopy.*
6. FRIEDEMANN, N. *The Theory of Anaphylaxis.*
7. WOLFF-EISNER, A. *Concerning Non-Toxic Tuberculin.*
8. KLOTZ. *Experience concerning the Therapeutic Application of Bolus Alba and Carbonic Acid Snow.*
9. LIESKE, H. *Proposed Change in Legislation Relative to the Isolation of Persons for Observation of Their Mental Condition.*

1. The author points out the progress made in the treatment of pancreatitis and gives the results of early operation in Breslau under Köttner, where the mortality has dropped from 30% to 8%. He discusses at length the recent progress made in experimental work as to the origin of pancreatitis. Then follows a full description of five cases of necrosis of the pancreas. In conclusion he states that certain light attacks of this malady occur, and recoveries without treatment follow. He points out the necessity of drawing a distinction between the light, severe and chronic attacks. An early operation offers by far the best chance. We must pay greater attention to the earliest possible symptoms, which at present are far from being clearly and sharply defined. [J. L. H.]

## Miscellany.

### MEDICAL INSPECTION OF FACTORIES.

ONE of the topics for discussion at the fourth annual meeting of the American Association for Labor Legislation, St. Louis, Dec. 28–29, 1910, was, "Do We Need Medical Inspection of Factories?" Dr. William C. Hanson, of Boston, representing the Massachusetts State Board of Health, read the following paper, which was accepted without discussion: "Do We Need Medical Inspection of Factories?"

"For practical purposes, we shall understand factory inspection to include inspections and investigations of conditions affecting the health safety or welfare of persons engaged in industrial pursuits. Factory inspection includes a very large amount of work which can properly be designated only by the words 'factory hygiene,' which, used in the broader sense, includes the hygiene of occupation or the effect of industry upon health; and factory hygiene, in turn, must properly be considered a branch, but not an isolated part, of community hygiene.

"Opinions of some of the Massachusetts State Inspectors of Health, who have had nearly four years' practical experience:

"'The examination of the health of minors, and, whenever possible, of adults, can only be done by medical inspectors.

"'Medical inspection alone can insure progress in factory inspection and save it from mere routine.' — Dr. Harry Linenthal.

"'Any relaxation of medical inspection of workshops and factories would be a step backward.' — Dr. Lyman A. Jones.

"'The primary object, the health of the employee, should ever be kept in view rather than the mere detail of inspection.' — Dr. Wm. H. Coon.

"'Non-medical men, or inexperienced medical men, cannot cope with the many problems arising in connection with the work or deal successfully with well-trained mill men in industrial problems.' — Dr. Adam S. MacKnight.

"'The medical inspector is able to do all that the layman does, and his medical training enables him to do much that is necessary, from which the layman is barred.' — Dr. Wm. W. Walcott.

"'My medical training has been a help to me in that I more fully appreciate the injurious influences on health of poor ventilation, poor light, excessive heat and moisture, poisonous and irritating dusts, gases and fumes.' — Dr. Lewis Fish.

"'Much that I have learned about dangerous trades would never have been found out, or fully understood, without a medical teaching.

"'The possibilities of the spreading of infectious diseases by the various trades and customs are more readily seen by the man who knows something about the nature of the organism and its mode of action.' — Dr. Charles E. Simpson.

"'Three years' medical inspection work in factories have brought to light many grave and faulty hygienic conditions, which have been allowed to exist for years under the non-medical factory inspection system.

"'Hitherto non-recognized conditions of ill-health of minors have been found by medical inspection, as well as non-recognized cases of diseases dangerous to the public health among both minor and adult employees.' — Dr. Elliott Washburn."

Aside from such work as that which requires special technical knowledge, by far the most important part of factory inspection can be done only by well-trained physicians who have some practical knowledge of hygiene and sanitation. While it is obviously true that factory inspection by medical men exclusively is neither practicable nor economical, it is equally true that

medical men alone are in position to make the best use of facts obtained concerning the sanitary conditions of the premises where men and women work; to study the possible injurious effects of certain processes upon health of the persons engaged therein; to inspect devices designed to protect the employees against injurious and dangerous substances and to judge of the effects upon the health of operatives of such substances, as well as to detect pathological signs or symptoms of certain poisons, dusts and fumes incident to some occupations; to inquire as to the health of the employees, both for the purpose of aiding those found in ill health or physically unfit for work and for protecting others from infectious diseases; to make physical examinations of minors, and, whenever possible, of adults engaged in trades or occupations deemed to be injurious to health; and to collect and make proper use of all facts and data, including morbidity and mortality statistics, pertaining to occupational hygiene.

## BOYLSTON MEDICAL SOCIETY, 1811–1911.

The centennial anniversary of the Boylston Medical Society was celebrated by a dinner at the Harvard Union, Jan. 6. Some two hundred and fifty active and graduate members were present. The living room of the Union made a splendid setting for such a memorable occasion.

Dr. John Lovett Morse, president of the society, acted as toastmaster. In his introductory remarks he mentioned that this was probably the first time in America that an undergraduate medical society was able to celebrate its one hundredth anniversary. He stated that members from far distant states had written or telegraphed their regrets. He then introduced Dr. David William Cheever, professor of surgery, emeritus, in the Harvard Medical School. Dr. Cheever spoke of the society as he remembered it when an active member in 1854. The meeting place was the small and bare library of the Medical School on North Grove Street. He spoke of the medical instruction in those days and the quality of the students, and, in striking contrast to these, of the faculty, made up as it was in part of names immortal in the history of medicine. He told of the trials of the demonstrator of anatomy in the days before cold storage and antiseptics. In closing, he quoted timely advice from an address he delivered in the Medical School some forty years ago on the ideals and rewards of the medical practitioner.

The next speaker, Mr. Miles Fuller Porter, Jr., vice-president of the society, spoke with eloquence and force on what the Boylston meant to the undergraduate to-day and paid a fitting tribute to Dr. Morse and his influence on the society.

Dr. John Winters Brannan, chairman Board of Trustees of Bellevue and Allied Hospitals, was the next speaker. He told of his early association with the society and the life of the medical student of his day. He entered a plea for the better housing of the medical students and hoped that a comfortable dormitory would soon be added to the group of buildings on Longwood Avenue. He stated that a movement was already started in New York in connection with the Y. M. C. A. to provide the medical students with proper quarters. In conclusion, he mentioned that as opposed to corrupt politicians in his department in the city, he had the active support of six men, five of whom held degrees from Harvard University.

Dr. S. J. Mixter, of Boston, moved that a suitable telegram be sent on this occasion to a physician's wife in the South who was proud of her blood relationship to Nicholas Boylston, in whose honor the society was named.

The fourth speaker of the evening was Dr. Reginald Heber Fitz, professor of the theory and practice of physics, emeritus, of the Harvard Medical School. He told of the founding of the society and of the Boylston family and its contribution to medical education. He dwelt at length on the life of Zabdial Boylston, a colonial physician, and on his introduction of inoculation as a preventive measure in Boston, then in the throes of a smallpox epidemic. This was really the first great work of preventive medicine in America. He told of the opposition Boylston met with, of his persecution by the medical profession, of his courage and perseverance, and of his final recognition and fame.

The concluding speaker of the evening, Dr. Charles William Eliot, touched upon the Harvard Medical School as he knew it first in the early fifties, when he was instructor in chemistry. He contrasted the students of that day with those of the present classes. He spoke of the tremendous changes in instruction in the past thirty years, and stated that we must expect even greater changes and advance in the years to come. That the physician of the future would have much wider range for his activities was assured. He must treat classes of mankind and humanity in general for their woes rather than merely treating individuals.

Dr. Morse concluded the formal events of the evening by handing over the active management of the society to the members of the third-year class of the Harvard Medical School and the new president of the society, Dr. Edward H. Nichols.

## Correspondence.

### THE MEDICAL PROFESSION MUST CHANGE ITS TACTICS.

12 Mt. Morris Park, West,
New York, Jan. 5, 1911.

*Mr. Editor:* He who is not a frequent visitor to radical clubs, does not come in contact with newspaper men, with New Thoughters and who does not read regularly the numerous naturopathic, health culture and physical culture journals and other allegedly advanced publications can have no idea how the medical profession is ridiculed, how it is maligned, how it is lied about, how it is misrepresented, how it is "knocked" on every possible occasion.

We are pictured as ignoramuses, grafters, butchers,

anxious to operate whether there is a necessity or not, drug dopers, etc. We are denounced as a trust, monopoly, and any attempt of ours to organize, to pass laws protecting the public health, is characterized as an attempt at class legislation, a desire for special privileges, inspired by our fear of the competition, by our fear of the superior skill of our irregular rivals.

And the average physicain who has not given the matter any thought has no idea what effect these unceasing slanders and persistent lies have on the public mind, how suspiciously a large part of the public is beginning to look at the medical profession, how we are losing the confidence of the people, how the ground is slipping from under our feet.

As an illustration we need only mention the reception that has been accorded to the suggestion of a Federal Department of Health. The motives that actuate us and the objects of such a department were at once misrepresented; the people were made to believe that their freedom to choose a medical adviser was threatened; the forces of reaction and obscurantism, masquerading in some instances under the guise of liberalism, were quickly marshalled, and in a short time a society was organized, which now claims a membership of one hundred and fifty thousand.

We physicians are ourselves to blame. When the irregular, fantastic and pernicious cults began to make their appearance, we paid no attention to them. We thought they amounted to nothing, and would soon dry up and shrivel away of themselves. When the malicious attacks began to appear in the various quack publications we remained silent. We considered it *infra dignitatem* to pay attention to them, and we thought that the public would have no difficulty in seeing through their falsity and meretriciousness.

Our long and patient inactivity has been due to the false idea that truth will always triumph and error is bound to die. Yes, eventually. But if error is allowed to grow and spread unhampered, while those who see the truth will not take the trouble to proclaim it and expose the error, then it can take centuries before the correctness of the truth and the falsity of the error will be perceived.

In this as in every line of human activity prevention is immeasurably superior to cure, and the right way to fight error is not to permit it to get a firm foothold. Error and superstition are hard things to uproot after they have attained the dignity of a universal belief.

It is time that the medical profession change its tactics and assume a wide-awake, militant attitude. It is time that we actively attack error wherever it shows its head. By reading papers before lay audiences, by participating in discussions, by writing to the newspapers, by refuting the false arguments of the false prophets wherever they appear, we can do much toward destroying the influence of the quacks and the irregular cults. In short, we must throw off our exclusiveness, we must go out to the public and take it into our confidence.

The truth is with us — that we know; only we must not hide it under a bushel and expect that its light will, without any effort on our part, penetrate into the darkest recesses of ignorance and quackery.

Very truly yours,

WILLIAM J. ROBINSON, M.D.,
*President American Society of Medical Sociology*

## THE HEREDITY OF INSANITY.

BOSTON, Jan. 11, 1911.

*Mr. Editor:* In connection with investigations by the State Board of Insanity concerning heredity in mental disease, the question has arisen, *Does insanity in* BOTH *parents necessarily entail insanity in their offspring?* Any facts which our readers may care to offer in this direction will be gratefully received by the undersigned. Data should be included concerning the onset of the insanity in the parents, whether before or after the birth of the children, as well as concerning the age which the supposedly normal children have attained.

E. E. SOUTHARD, M.D.,
*Pathologist to the State Board of Insanity, State House, Boston.*

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DEC. 31, 1910.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | — | — | Waltham | 7 | 0 |
| Chicago | 669 | 168 | Brookline | 8 | — |
| Philadelphia | — | — | Chicopee | 8 | 2 |
| St. Louis | — | — | Gloucester | 8 | 1 |
| Baltimore | — | — | Medford | 4 | — |
| Cleveland | — | — | North Adams | 8 | 1 |
| Buffalo | — | — | Northampton | 8 | 1 |
| Pittsburg | — | — | Beverly | 4 | — |
| Cincinnati | — | — | Revere | 7 | — |
| Milwaukee | — | — | Leominster | 2 | — |
| Washington | — | — | Attleboro | 7 | 3 |
| Providence | — | — | Westfield | 1 | — |
| Boston | 339 | 43 | Peabody | 4 | — |
| Worcester | 35 | 7 | Melrose | 3 | 0 |
| Fall River | 36 | 15 | Hyde Park | 4 | 3 |
| Lowell | 41 | 12 | Woburn | 8 | 1 |
| Cambridge | 28 | 10 | Newburyport | 6 | — |
| New Bedford | 39 | 12 | Gardner | 2 | 0 |
| Lynn | 23 | — | Marlboro | 3 | 0 |
| Springfield | 27 | 7 | Clinton | 9 | — |
| Lawrence | 35 | 9 | Milford | 3 | 1 |
| Somerville | 23 | 7 | Adams | 1 | — |
| Holyoke | 28 | 9 | Framingham | 6 | 1 |
| Brockton | 11 | 2 | Weymouth | — | — |
| Malden | 19 | 3 | Wakefield | 3 | 1 |
| Haverhill | 18 | 3 | Southbridge | 2 | 2 |
| Salem | 18 | 5 | Plymouth | — | — |
| Newton | 10 | 1 | Webster | 4 | — |
| Fitchburg | 11 | 4 | Methuen | 3 | 2 |
| Taunton | 12 | 4 | Wakefield | 3 | — |
| Everett | 7 | 1 | Arlington | 2 | 0 |
| Quincy | 8 | 1 | Greenfield | 3 | 1 |
| Chelsea | 9 | 3 | Winthrop | 1 | — |
| Pittsfield | 25 | 5 | | | |

## SOCIETY NOTICES.

NEW ENGLAND PEDIATRIC SOCIETY. — The thirteenth meeting will be held in Sprague Hall, Boston Medical Library, 8 The Fenway, on Saturday, Jan. 28, at 8.15 P.M. The following papers will be read: (1) "President's Address." (2) "When shall we Remove Tonsils and What shall we Do?" Eugene A. Crockett, M.D., Boston. (3) "What is to be the Attitude of the Pediatrist and the Orthopedist in the Treatment of the Child with Congenital Ptosis of the Abdominal Viscera?" Joel E. Goldthwait, M.D., Boston. (4) "Silver Nitrate Irrigations in the Treatment of Infectious Diarrhea in Infants." Richard M. Smith, M.D., Boston. Light refreshments will be served after the meeting.

JOHN LOVETT MORSE, M.D., *President.* FRITZ B. TALBOT, M.D., *Secretary.*

NEW ENGLAND HOSPITAL MEDICAL SOCIETY. — The annual meeting of the New England Hospital Medical Society will be held at the Hotel Vendome, Thursday, Jan. 19, 1911. Business meeting at 6 P.M. Election of officers and change of by-laws. Dinner at 6.30 P.M. An interesting program has been arranged by members of the Society.

BLANCHE A. DENIG, M.D., *Secretary.*

## RECENT DEATHS.

ROBERTS, OSCAR SAMUEL, M.D., M.M.S.S. died in Pittsfield, Jan. 4, 1911, aged seventy-three years.

DAVIS. SAMUEL ALONZO, M.D., M.M.S.S. (retired), died in Somerville, Jan. 3, 1911, aged seventy-three years.

DR. WILLIAM A. OBERLE, of Newark, N. J., died in the St. James's Hospital in that city, on Jan. 6, from septicemia contracted while operating on a patient. He was twenty-eight years of age and a graduate of the Baltimore Medical College.

DR. GEORGE BULL, an ophthalmologist, formerly of New York City, died on Jan. 1, in Paris, France.

DR. SAMUEL ALONZO DAVIS, who died of pneumonia last week in Boston, was born on Sept. 17, 1837, at Bridgton, Me. After graduating from Bridgton Academy, he entered the Harvard Medical School, from which he received the degree of M.D. in 1862. He practised for a short time in Charlestown, then joined the Thirtieth Massachusetts Regiment, which he served as surgeon till the close of the Civil War. Subsequently he resumed his practice in Charlestown, and continued it until his retirement in 1907. He is survived by his widow.

## Original Articles.

### THE SANATORIUM TREATMENT OF NEURASTHENIA AND THE NEED OF A COLONY-SANATORIUM FOR THE NERVOUS POOR.

BY FRANK K. HALLOCK, M.D., CROMWELL, CONN.

THE general principles underlying home, sanatorium and institutional treatment of neurasthenia and the psychoneuroses are essentially the same. The variations in the therapeutic procedure which may be attributed to residential conditions do not imply a change of these principles, but merely a difference in their application.

In neurasthenia and its associated disorders, psychasthenia, hysteria and hypochondria, we have presented, perhaps, the most comprehensive therapeutic problems in the whole range of medical practice. Speaking broadly, this class of disorders stands between the psychoses on the one side and the organic and severe functional derangements of the body on the other. That is to say, to a greater or less extent, the psychoneuroses constitute a blend or mixture of psychic and physical elements, and the entire individual requires treatment from every side. Whatever status is accorded these disorders, the main fact to note is that the fundamental principle of treatment requires the division of the therapeutic effort into two more or less parallel directions; one along the lines of the restoration of the bodily forces and the other along the lines of nervous and mental training. This doubly directed therapeutic effort represents a readjusting process, both mental and physical, and is educative in principle; that is, as far as possible the patient is taught how to help himself. That this idea or principle of teaching the patient is the correct one for the physician to hold is made evident by the fact that in the great majority of cases it is the kind and the way that the given life is led that makes the neurasthenic. Even when the original endowment of nervous energy is far below the average, as in the constitutional neurasthenic, the state of neurasthenia, barring intercurrent or accidental causes, could have been avoided if the individual had known how to use his limited amount of nervous energy.

Hence, in order to be able to hold the patient up to himself, as before a mirror, the physician must know the man even more than his symptoms; for, in a sense, these latter are merely the surface play of the deeper psychic and chemico-physiologic processes. To gain this knowledge requires the taking of a careful personal history and the making of a most thorough examination. All departments of the body organism, somatic, neurologic and psychic, should be inquired into, and of especial importance is the study of the circulatory system and the gastro-intestinal tract. In the last analysis the physical basis of neurasthenia lies in the biochemic processes having to do with the nutritional and metabolic functions of the body. This leads me to repeat a favorite dictum of mine which I have previously stated to this society, namely, that the integrity of the nervous system depends upon the integrity of the lower grade tissues of the body.[1] Conversely, the same holds true. Thus, using one word to explain the production of neurasthenia arising primarily from and through the psychological side, I should say that intensity, excessive or long continued, in the action of the nervous system, whatever else it may do, certainly tends to lead eventually to hypertension in the circulatory system, and this latter condition is the forerunner of all manner of ills.

After gaining sufficient knowledge of the patient, we proceed to follow out the twofold therapeutic effort. The first step is to formulate the best kind of a physical life for the patient to lead. The second step is to explain to him where he stands, what his symptoms mean, or, chiefly, what they do not mean; to teach him how to get out of his present condition and how to avoid a future breakdown.

The first step requires the laying out of a program for the daily conduct and disposition of time, including the employment of all curative agencies. These agencies may be classified as follows:

1. Natural: Air, sun, water, diet, rest, exercise, work, play.

2. Physical remedial methods: Massage, electricity, body manipulations by hands and by apparatus.

3. Medicinal agents: Symptomatic, metabolic.

The second step or division of the therapeutic effort relates to the nervous and mental training, and this means that we have to choose the kind of psychotherapy to be practiced.

One of the chief objections to the giving of suggestion by means of the various hypnotic procedures is that the changes effected in the patient represent something which is done for him. The miracle, so to speak, is wrought without conscious struggle, almost without his knowledge. The relief from pain or disagreeable thoughts is without credit to any effort on the individual's part; it is, as it were, handed him on a silver platter, and consequently he is not so likely to profit by his experience.

As already stated, the true therapeutic principle is educative; furthermore, it is the law of evolution that it is the fighting and putting forth of personal effort which makes the recovery more certain and more permanent. Hence, the ordinary conversational or, what I have elsewhere called the "plain talk method," is to be recommended for routine sanatorium practice.[2] This method may be defined as representing that class of educative-suggestive influences which result from explanatory and argumentative reasoning, appeal, advice or command, as exemplified in normal conversation of a deeply earnest and sincere character.

All psychotherapeutic methods which are intelligently adapted to the requirements of the individual and conscientiously practiced have their value, and they nearly all include a certain

[1] Proc. Conn. Med. Soc., 1907 and 1908.
[2] Psychotherapy. Edited by W. B. Parker, vol. ii, no. 4, 1909.

amount of psycho-analysis, the explanation of symptoms, the inculcation of hope and faith, and the teaching of the general philosophy of optimism. The appeal is made to change the viewpoint, to readjust the mental attitude so that the patient faces his problem with an earnest spirit of intelligent co-operation and a brave determination to succeed.

The *importance* of the psychotherapeutic side of the treatment of neurasthenia can hardly be overestimated. The *success* of the psychotherapeutic procedure will depend upon the personality of the physician combined with his psychological insight and the skill and wisdom of his suggestion and advice.

In comparing the relative merits of home, of a room with a nurse in a hotel or boarding house, of institutional and of sanatorium treatment, we may consider the following propositions:

First, during a course of treatment the neurasthenic patient is better off in a new environment. The change from the home conditions under which the neurasthenia developed to new scenes and different personal relations is almost invariably beneficial.

Second, by reason of the definite system under which they must be conducted, there exist in all well-regulated establishments certain institutional influences which operate silently, but more or less powerfully, upon the individual. One of the most important of these influences is that of resignation and obedience to general rules and a greater willingness to follow personal orders.

Third, other things being equal, the success and rapidity of improvement in the patient depends upon the ease and completeness with which all forms of treatment, physical and mental, can be carried on.

The third proposition is the chief and comprehensive requirement, and it is against this that the residential factor in the treatment of the patient has to be measured. When this is done it will be evident that the establishment representing the sanatorium principle is theoretically, at least, the best place for the neurasthenic invalid. Special neurological institutions or neurological wards in a general hospital stand next in order of preference, and within the limits of the city they offer the best provision for the poor neurasthenic.

When one considers the increased growth of nervous and mental disorders in present-day life, it is not too much to say that nearly every large general hospital should have both a neurologic and psychopathic department. While these departments should be specially equipped and conducted, they should, nevertheless, be regarded as divisions or branches of internal medicine.[3]

If a plan like this was more generally followed, three crying needs would largely be met. First, there would not be such a necessity for a special state institution for the temporary detention for observation of a person suspected to be insane, as was discussed by Judge Joseph E. Russell at the meeting of the Fairfield County Medical Association held in Stamford two days ago.[4] Second, the organization of a psychopathic department in general hospitals would tend to lessen the unfortunate stigma attached to both the insane person and the insane hospital. Third, the foundation of neurologic wards or departments in the hospital would certainly relieve in some measure the great demand for suitable places to send neurasthenic patients of limited means.

Returning to sanatorium treatment. Why is this superior to all other methods? It is because it best fulfills the conditions requisite for the perfect or ideal treatment of the neurasthenic. The establishment is a unit; it is located, planned, equipped and manned by medical officers and a corps of nurses especially trained for one single purpose. It is not a part of a larger, more comprehensive affair, like a general hospital. Being situated, as it should be, in the country and under conditions where the natural agencies have greater and more perfect play, it is superior to the city neurologic institute or hospital. The fresh air and unobstructed sunshine, the fields and woodland, the wide and pleasant view, the quiet and the freedom are assets of incalculable value.

There are, of course, various types of sanatoria, but nearly all of them fall between these two extremes: One is the sanatorium, usually the smaller, which is dominated by the spirit or influence of the head physician and upon whose personality and therapeutic skill chiefly depends the success of the institution; the other type is the sanatorium which relies more upon the application of various physical methods than upon the personal or psychotherapeutic ability of the medical officers.

Two widely known examples of sanatoria such as I have described are the institutions at Berne, Switzerland, and the Lahmann Sanatorium at Dresden, Germany. Professor Dubois at Berne hardly has more than a common bath-tub in the way of physical appliances. He depends almost entirely on psychotherapy. Dr. Lahmann, the founder of the Dresden institution, made it famous by his strong personality, but at the present time his successors rely almost entirely upon the use of physical methods and apparatus.

The consideration of these facts leads to the observation that the sanatorium has the advantage of other institutions in the possibility of developing within its walls an atmosphere which is wholesome and uplifting. This atmosphere or spirit of the place is a very important and powerful factor in the restoration of the neurasthenic invalid.

The sanatorium, if it is not too large and institution-like, lends itself most readily to the maintenance of such a household tone as well as to the development of all the activities which enter into the daily life of the patient. For instance, the question of work and occupation requires the fullest expansion. No sanatorium can afford to be without an arts and crafts department,

[3] Theodore Diller: Jour. Am. Med. Asso., vol. liv, no. 24, 1910.

[4] "The Need for a State Institution where the Suspected Insane may be Temporarily Detained for Observation Pending Final Commitment."

but so far in this country the outdoor occupations have not proved as effective as they should. The benefit from games and all kinds of diversion is very great, and this branch of activity should be more thoroughly studied. All these things and many others can only be most perfectly developed under conditions such as exist in a suitably located and properly conducted sanatorium.

There is no further need of mentioning other advantages which belong especially and peculiarly to the sanatorium. Alas, too, there are numerous evils and deficiencies in actual sanatorium practice as exemplified in this country. Many of our establishments are poorly equipped and badly managed, and, worst of all, the chief aim and purpose of some institutions is quite purely commercial. Whatever the defects that prejudice many physicians against our sanatoria, this much cannot be gainsaid, namely, that the sanatorium principle or idea is fundamentally correct, and when properly carried out it is superior to all other methods in the treatment of neurasthenia and the psychoneuroses.

If the fact is accepted that sanatorium treatment is the best for cases of neurasthenia and the psychoneuroses, the question is pertinent whether there are enough special institutions or other satisfactory accommodations for all the patients requiring such treatment. The answer is emphatically, "No!" The wealthy can visit the better grade, high-cost sanatoria or otherwise compel conditions to be made right for their cure, but the middle and poorer classes, if they go away from home, can do little else than frequent a more or less indifferent boarding-house or become a ward patient in the general hospital. These unfavorable conditions and the lack of suitable treatment combine to make the recovery of the patient slow and unsatisfactory. In brief, there is no proper institution, no suitable place, to send the impecunious neurasthenic or any psychoneurotic patient without means.

Now the three questions which I want to propound to you are these: First, Is the number of this class of patients great enough to warrant the establishment of a sanatorium for their benefit? Second, Should such an institution be established by private philanthropy, or is it a legitimate object to which the state should contribute its funds as it does to its other charitable institutions? Third, What kinds or classes of patients should be admitted for treatment?

The answers to the first and third questions can be readily made. As regards the first question, the testimony of physicians everywhere indicates that under the pressure of present-day civilisation the number of neurasthenics as well as the number of all other kinds of nervous affections is increasing. Practitioners in the country towns may not fully realize this fact. Nevertheless I venture to say that every one of these members of our profession has in his practice one or more such patients who would be greatly benefited if they could be sent away from the home environment and given the advantage of proper sanatorium treatment.

The answer to the third question can be given without much hesitation. First and foremost, the psychoneuroses should be admitted; that is to say, cases suffering from neurasthenia, psychasthenia, hysteria and hypochondria, the latter not of the severe type. Next, many of the functional neuroses could be received, such as neuritis, migraine, chorea (if not too marked), vasomotor disturbances, etc.

Cases afflicted with melancholia or any evident mental disorder, epileptic patients or alcohol and drug habitués should not be admitted. The main criterion for admission should be to avoid receiving any case which will have a too marked depressing or disturbing effect upon the general household.

Another function of the colony-sanatorium would be to serve the purpose of a psychopathic institution. It might not do this to the fullest extent, but it undoubtedly would in very great measure. A certain proportion of border-line cases, however, would be too eccentric, or otherwise exhibit behavior too suggestive of an impending psychosis, and such patients would be unfairly disturbing to the general household.

Right at this point it may be permitted for me to state very briefly my views on the establishment of a psychopathic hospital and the disposition of the class of border-line cases just referred to. The group of patients who should be subjected to more or less detention, care and treatment on account of doubtful sanity can best be managed, in many opinion, through the medium of psychopathic wards in the general hospital. A separate institution either entirely alone or as a branch department of an insane hospital would soon be subject to the usual stigma attached to the abode of mental patients. As regards the question of mental integrity, the public seems to think that once to be suspected is almost as bad as to be actually insane. Hence, to be an inmate of a general hospital would afford ample protection from unfair criticism and suspicion, and the psychic problem would be solved under the happiest auspices.

The answer to the second question, whether the state or private philanthropy should found and conduct a colony sanatorium for the treatment of functional nervous diseases, is not as readily given. Every nervous specialist, however, and most general practitioners who have had much to do with nervous patients (if they carefully consider the question), will be inclined to answer that the state ought to build and operate such an establishment. There can be no reasonable doubt that this is a fair, wise and economic proposition, one eminently worthy of the serious consideration of the commonwealth.

Briefly stated, some of the reasons for the establishment of such an institution are these:

First, The number of patients needing treatment is great; hence there is demand.

Second, There are no suitable institutions or places of treatment for these patients.

Third, Such an institution would prevent more serious illnesses:

(1) Many cases of ordinary nervousness, impending neurasthenia, hysteria, etc., would undoubtedly be aborted by suitable treatment and removal from the aggravating home environment.

(2) It is certain also that some cases of impending psychosis would be checked.

To accomplish such results as these would alone justify the founding of the institution.

Fourth, Such an institution would effect more rapid cures than could be obtained under any other kind or form of treatment.

Fifth, A certain proportion, and a not inconsiderable one, of chronic cases hopelessly drifting along as burdens to themselves and families could be cured by proper sanatorium treatment. The saving of such patients from the fate of becoming physician and dispensary "rounders" or surrendering themselves abjectly to chronic invalid habits would have a very positive economic value, to say nothing of the great relief of both individual and family suffering.

Sixth, The more rapid relief and cure in acute cases would lessen the period of disability. This would mean an economic saving, both direct and indirect, in very many families throughout the state. The value of the earlier return to work, either as the wage-earner or, as the woman, head of the family and home, cannot be estimated, but it certainly must be great.

If the above statements are true, is it fair or right for the state to wait for private charity to do the work which has so decidedly an economic as well as humanitarian significance?

A brief glance at the history and experience of other nations in the foundation of sanatoria for the poor will show what their answer to this proposition has been.

Benda was the first to introduce the idea in Germany, but his pamphlet on "Public Institutions for Nervous Patients" made little stir. In 1891 Krafft-Ebing aided the movement by a public report urging the establishment of these special sanatoria either by private charity or by the government. But it was due largely to the writings of Moebius in 1894 and 1896, followed by the hearty endorsement and urgent pleas of the greatest authorities in neurology and psychiatry, such as Erb, Forel, Kraepelin, Strümpell, Jolly and Laehr, that finally an establishment was built and in 1899 set in operation. This institution, called Haus Schönow, near Berlin, can receive about 75 patients. It also has an out-patient department. The cases received are all from the working class, and the weekly charge averages about $5. In 1902 the second institution was founded near Göttingen, this one being built by the government. Since then colony-sanatoria have been established in Sachsen Weimar, in Hesse, in the Rhine province, and recently the city of Frankfort-on-the-Main has set aside $100,000 for this purpose. Some years ago Switzerland established the "Colonie-Friedau." Sweden is now preparing to found an institution modeled after "Haus Schönow." At the Second International Congress for Assistance to the Insane, held in Milan in 1906, this resolution was adopted: "The Congress expresses the desire to see organized popular sanatoria for the nervous, erected in suitable locations, open to all without preliminary formalities, as is now being done in Germany."[5]

The first institution for the nervous poor in this country was founded in Boston in 1873 under the will of Seth Adams, himself a neurasthenic. This admirable institution, the "Adams Nervine," accommodates under 50 patients, many of whom are treated without charge.[6] Within the past year a very progressive step has been taken by three neurologists in New York. As the result of the earnest efforts of Drs. Joseph Collins, Pearce Bailey and Joseph Fränkel a neurological institute has been established for the benefit of the wage-earning middle and lower classes.[7]

The fact that, both here and abroad, every institution and every other provision for the nervous poor is strained to the utmost to meet an increasing demand for accommodation and treatment would seem to be irrefutable evidence of the need of sanatoria such as proposed. However, it may be questioned whether the state should assume another charitable enterprise of this character, and in order to settle this matter fairly I would recommend that Connecticut follow the lead of Massachusetts and that our society urge upon the General Assembly the appointment of a committee to ascertain the wisdom and advisability of establishing such a colony-sanatorium for the nervous poor.

The following resolution has been passed and approved by the Legislature of Massachusetts, and the committee has been appointed and is now at work. It reads as follows:

"*Resolved*, that the governor, with the advice and consent of the Council, shall appoint a commission of five persons to determine whether it is expedient and practicable to establish and maintain a state hospital or sanatorium for the cure of cases of nervous breakdown and for patients who are suffering from nervous or mental disturbance not amounting to insanity. If the commission shall determine in favor of such a hospital, it shall present to the General Court a bill or bills embodying the legislation which it wishes to recommend. The commission shall report to the General Court not later than the first day of January in the year nineteen hundred and eleven. The commissioners shall serve without compensation, but may expend for their incidental and contingent expenses a sum not exceeding five hundred dollars."

Gentlemen of the Connecticut State Medical Society: Some time ago there was placed in the hands of a few of your members a banner on which was emblazoned "A State Colony for Epileptics." For nine years these members held that banner aloft and repeatedly stormed the State Capitol. At last, on the outer ramparts of that building,

[5] G. W. Jacoby: "A Colony Sanatorium for the Nervous and Neurasthenic; a Much-Needed Philanthropy." New York Med. Jour. April 15, 1905.
[6] H. R. Stedman: Jour. Nerv. and Ment. Dis., August, 1905.
[7] Collins and Bailey: Jour. Am. Med. Asso., vol. lv, no. 5, 1910.

this standard was securely planted; to-day the State Colony for Epiletics is one of the assured and worthy charities of this good old Commonwealth. Gentlemen, the Connecticut Medical Society has had a hand in many worthy projects. It has sought not alone to raise its own standard of efficiency, but it has also fought for the well-being and physical improvement of the citizens of the whole state. Such an organisation as this cannot stand still; it must always fight and lead the way to better things. Therefore, unless some one can name a better cause, I place in your hands to-day another banner which some of you must carry unflinchingly to the front until it too shall grace the outer ramparts of our State Capitol. The words on this standard which I now hand you are, "A State Colony-Sanatorium for the Nervous Poor."

## ALIMENTARY GASTRIC HYPERSECRETION AND GASTRIC ATONY.

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One criticism applicable to almost all the German works on gastric diseases is the very meager attention given to functional disturbances of digestion, or the so-called nervous dyspepsia, which all will agree is only a part of a general neurosis, but one to which the patient ascribes the greater part of his discomfort and one which must be treated per se, while hygienic measures may be employed at the same time for the restoration of the individual to a normal condition of nerve stability, be it by hydro-electro- or psychotherapeutic measures, for it is not sufficient to say simply that the patient is suffering from nervous dyspepsia, and that he may eat, as Abernathy once said, "The shovel or tongs," implying, of course, that such an individual may eat anything with impunity. Simple as it may seem in many cases, the greatest effort of the practitioner is to induce the patient to eat at all, for one article of food after another is rejected by the patient as disagreeing, until one wonders what has saved him from the fate of Tanner or Cetti. In 1907, however, there appeared from the pen of Zweig, in Vienna, a short work on the treatment of gastro-intestinal diseases, in which due attention has been given to the differentiation and treatment of the various forms of so-called nervous dyspepsia, and though all are functional and, as one author contemptuously remarks, may be dissipated by a week at the mountains or seashore, as if this made them unworthy of study, Zweig has made them one of the most interesting chapters of his book, and particularly adapted to the uses of the American physicians, since, from experience in the German gastro-intestinal clinics, I cannot say that nervous dyspepsia is by any means lacking, though the cases of that form of functional gastric disease are vastly in the minority as compared with the true gastritides and old unhealed ulcers. Among the forms of functional gastric disturbance two varieties are emphasized in this book which are commonly confounded in clinical laboratories from their common quality, largely increased amount of gastric contents withdrawn after a test breakfast, and these two types form the title of my article. While great variations occur, it is probable that 100 ccm. represents the average normal amount withdrawn from the healthy stomach one hour after the test breakfast without the aid of water, and 150 ccm. if the stomach be afterward washed out and its contents estimated by the method of Mathieu-Rémond. Formerly, 60 ccm. was regarded by me as the average amount, probably from the results derived from the expression method, but with the aid of the suction produced by a good bulb, the amount averages much larger, while the washing and calculation gives the largest amount of all, but, on account of its inconvenience, demanding the double estimation of the gastric acids, is rarely used. Now, when the amount withdrawn after a test meal increases to 200 ccm. when simply withdrawn, or to 350 ccm. to 500 ccm. when the stomach is washed, we originally ascribed it at once to atony, particularly if succussion could be found in the patient at the same time. We owe it to Elsner and Zweig to have shown that splashing may occur in a stomach with not more than 50 ccm. in it in which there is not the slightest evidence of any motor disturbance. Hence we are forced to find some other cause for our increased gastric contents after a test breakfast, and this has been done by Zweig and Calvo in the detection of a typical digestive hypersecretion, which is not at all synonymous with the intermittent or continuous variety; fasting, the stomach is always empty, and food of any sort, but more particularly imperfectly cooked foods, as well as alcohol, cause an exaggerated action of the gastric glands and thus produce a largely increased amount of gastric juice. It is quite important that a definite diagnosis be made between these two conditions, for while the causation is much the same, worry, long and intense application to business, particularly when the latter is not prospering, as well as hard study before and during examinations in students who pay little or no attention to the demands of hunger, the latter conditions apply much more closely to hypersecretion than to hypotony, as some call it, for the latter is much oftener associated with a general myasthenia, increased or exaggerated, with reference to the stomach by the local conditions. Musser has reported some instances of this condition in students, but whether associated with hypersecretion, he dose not state. The treatment, however, differs decidedly, and hence the importance of distinguishing these two conditions. In alimentary hypersecretion, on account of the irritation produced by food, the meals should be limited to three daily, and effort should be made, by the use of belladonna preparations, to limit the amount of secretion or, even better, by the use of methylatropine nitrate (Eumydrin), in tablet form or with milk sugar, in doses of from (0.001 to 0.0025 gm.) 1-60th to 1-24th gr. before

meals; in case of atony, however, the meals should be more numerous, at least five, on account of the lack of motility of the stomach to empty itself, and resource should be had to nux vomica tincture and the strychnia preparations. Now as to the method of distinguishing between these two conditions, which demands nothing more than a good centrifuge with graduated tubes. I have made use of those which are carefully graduated in tenths of a cubic centimeter to 10 ccm. and then have a mark at 15 ccm. One or, better, two of these are filled to the 15 ccm. mark with the contents, and then centrifuged for three minutes at about 3,000 revolutions per minute; if the solid contents only fill the tubes to 3 to 5 ccm., 20 to 33⅓%, and an average of both tubes should always be taken, we have a case of hypersecretion before us; if, on the contrary, the solids fill the tubes to 7½ to 10 ccm., 50 to 66⅔%, we are dealing with an atony of the stomach. This also makes an excellent preliminary preparation for further analysis, since the fluid portion is freed from all solid particles and can be used for the determination of the acids, ferments, etc. Perhaps a few illustrative cases will make these points more evident.

CASE I. C. A. W. Nausea and vomiting, particularly mornings, mild insomnia, moderate gastroptosis (to umbilicus). Gastric contents, one hour after test breakfast in four examinations, extending over a period of four months, amounted respectively to 155 ccm. with 33⅓% solids; 131 ccm. with 33⅓% solids; 143 ccm. with 25% solids; 73 ccm. with 33⅓% solids and 87 ccm. with 33⅓% solids. The hydrochloric acid varied from 26 to 30, and examination of the feces of the same individual showed numerous fatty acid crystals and soaps, as well as meat fibers, small mucin fragments intimately mixed with the feces and studded with shrivelled epithelial cells. Although this may be almost on the border line, it was regarded as an alimentary hypersecretion and steadily improved under faradism and stomach washings of first tannic acid and then alum, with restricted diet.

CASE II. Patient of Dr. J. S. Chase. The amount of the gastric contents was 350 ccm., in which the solids were 3%. Hydrochloric acid was equal to 9. Only one opportunity was afforded for examination of this individual, but it undoubtedly belongs to the group of alimentary hypersecretion.

CASE III. R. H. Distention and pressure after eating, no insomnia, occasional vomiting, fasting stomach empty, succussion sounds, no gastroptosis. The stomach contents after test breakfast amounted to 122 ccm., of which 16⅔% is solid. Hydrochloric acid is 48. This is another case of hypersecretion and not of lacking motility.

CASE IV. G. B. Headaches, nausea, occasional vomiting, fasting stomach empty; gastroptosis with gastrodiaphan in stomach, lower border 2 inches below umbilicus; smaller curvature 2 inches above same. The amount of stomach contents on two examinations at intervals of thirty days was 150 ccm. and 155 ccm., with solids 25%, free hydrochloric acid 52 and 57; twenty-four hours urine, 1,330 ccm. This is again a case of alimentary hypersecretion.

CASE V. J. J. M. Vertigo, headache and vomiting, some insomnia, succussion sounds and lower border of stomach at the umbilicus. The gastric contents after a test breakfast amounted to 180 ccm. with 50% solids; free hydrochloric acid, 66; twelve hours after a Riegel test meal, 120 ccm.; total twenty-four hours urine, 564 ccm. In this case the large amount of solids, 50%, points distinctly to lack of gastric motility, which also is confirmed by the small secretion of urine.

Regarding 30 to 40 as the normal for free hydrochloric acid, as given by Zweig, our attention is called at once to the fact that hypersecretion may exist without an excess of this acid; in fact, in two instances, the amount is less than normal, while in another it is not far from normal, 48. In one case only (IV) does the amount approach in any way that found in hyperchlorhydria; in the hypomotility, however, the amount is increased to 66, which is probably due to irritation produced by the delay of food in the stomach. That this increased amount of gastric contents in the former group is due to a true hypersecretion and not to a transudation from the water of the blood, or to a delayed absorption, is proven by the fact that the hydrochloric acid keeps so near the normal point and does not undergo dilution. Hypotony, according to Zweig, is not always accompanied by increased hydrochloric acid, so that this factor would be of little aid in distinguishing between these two forms of gastric neurosis. A marked difference can be noted in the amount of urine in hypersecretion and hypotony; the former apparently does not diminish the urine markedly, while the other does; in fact, so common is the distinction that it can be used as confirmatory of the results obtained by the centrifuge test.

As far as symptoms go, we can detect no apparent difference; both are accompanied by the usual stigmata of gastric neurosis, fullness and pressure after eating, and even before there can be the slightest possibility that the stomach is filled with food, anorexia, nausea and occasional vomiting. The question of vomiting should be inquired into carefully; with the usual exaggeration of neurasthenics, any regurgitation of the food into the mouth is called vomiting, and two patients of mine insisted that they vomited everything they ate, and apparently thought they told the truth, but their blooming appearance and lack of emaciation negatived any such statement, and after lively questioning the statement was modified and limited to a portion of everything eaten, which finally resolved itself into regurgitation of a few mouthfuls of every meal. The presence of splashing sounds proves no means of differentiation between these two conditions, as was noted in III and V, two entirely different conditions, as the precipitation test showed; in fact, Oser, in his clinical instruction, used to emphasize the fact that succussion sounds were of no value except to indicate the position of the stomach; if these sounds were heard at or below the umbilicus, it indicated that a portion of the stomach and, necessarily, its contents were under the fingers, but did not inform you whether you were dealing with a gastroptosis or a gastric hypotony; this, as stated above, has also been verified by Elsner and Zweig in producing succussion in a normal

stomach; it is much more likely to be found in air eaters, or sufferers from aerophagy, if one wishes a technical term. It can be plainly seen that there is a marked difference between the so-called hypersecretion and the hyperchlorhydria; the former is only the secretion of an abnormally large amount of normal gastric juice, while the latter is apparently the stimulation solely of the hydrochloric-acid-producing glands by which we may have a normal or slightly increased amount of gastric juice, but an increased relative quantity of the mineral acid. Just what regulates this percentage of acid is not fully demonstrated. Bickel, from experiments on animals and on humans, on whom both gastrostomy and esophagotomy have been performed for disease, so that pure gastric juice can be obtained, has found that the percentage of hydrochloric acid remains very constant when the flow is excited by psychic influence, as the sight or odor of food, or by allowing the mastication of food which passes out the esophageal fistula; this percentage remains in humans at 0.42%, an amount much higher than is found clinically; this in ordinary nomenclature would equal 115 and it is exceptional to find in severe hyperchlorhydria the free acid beyond 90 to 100. Of course the protein in the test breakfast or test meal by combination largely reduces this, and it is still further reduced by mucin and the so-called "dilution secretion" of the pyloric portion of the stomach; whether this acts in a compensatory way to ameliorate the effects of increased acidity is not known. An occult hyperchlorhydria, however, is recognised where the flow of juice is very rapid after food is taken, with increased procentual hydrochloric acid, but at the usual interval of one hour after the test breakfast this "dilution secretion," which is slightly alkaline, has so increased that the contents as a whole presents the usual acidity; naturally the total gastric juice must be markedly increased, with perfect motility of the stomach, so that what we here regard as alimentary hypersecretion may be a masked or occult hyperchlorhydria; of course a withdrawal and examination of the gastric contents before the hour interval would show this, but I do not know that sufficient examinations of this sort have been made to establish this principle. Bickel's explanation of hyperchlorhydria is that the gastric juice as a whole, with its constancy in mineral acid (0.42%), is increased in amount without change in its composition, but that the motility of the stomach is greater where the percentage of hyperchlorhydria is found increased and the neutralizing elements and water are forced out, leaving the hydrochloric acid in greater proportion behind. It seems difficult to imagine this selective influence by which the pylorus allows the watery elements to escape without the acid, but it is no more astounding than the separation of the proteases from the native proteins, though the latter be in the liquid state. According to Cannon's investigation, however, some of the hydrochloric acid must escape through the pylorus because this portal does not open until free hydrochloric is established. It is often difficult to reconcile scientific medicine with clinical experience, but if we bear in mind that only in the pyloric portion of the stomach does true admixture of food elements and gastric juice take place, while in the fundus, where the major portion of the food remains, only on the portions or layers of the food contiguous to the gastric mucous membrane does it, the food, come in contact with the gastric juice, and a homogeneous mixture is only found when the gastric contents are withdrawn with the tube, we may explain these differences. In fact, if we would regard increased or diminished motility as confined to the pars pylorica and not to the stomach as a whole, as it is usually regarded, we could perhaps explain these inconsistencies; with increased localised motility, the increased and slightly alkaline "dilution secretion" leaves the stomach, leaving the more concentrated (in hydrochloric acid) gastric juice behind; this mixed with foods is the portion withdrawn by the tube. In Bickel's experiments no portion of the gastric juice passes into the intestine, but comes through the fistula as secreted, a composite whole. Hence, his "dilution secretion," instead of passing into the intestine before it is thoroughly mixed with the true gastric juice, becomes an integral part of it and holds its acidity at a normal standard. Note that, curiously enough, this view changes our entire clinical notions in regard to motility. An increased procentual hydrochloric acid which has been regarded as associated with lack of motility, due to the stimulation of the peptic glands by the delay of the food in the stomach, becomes, according to Bickel, a much greater flow of gastric juice produced by the delay of food, but this is accompanied by increased motility by which the watery portions are eliminated. May not eventually the so-called impaired motility turn out to be due to lacking nervous impulse to the fundus dependent on delayed chemical digestion or liquefaction of the contained food? Strauss, working with the means afforded by physical chemistry, viz., freezing point and specific gravity, has attempted to show that the "dilution secretion" strives constantly to render the gastric contents isotonic with the blood and not necessarily to regulate the concentration of the HCl; in this respect he is much more in accord with the views of Bickel, who would make a simple hypersecretion of normal gastric juice, beyond the needs of the food for isotonicity, the abnormal form which is variously known as hyperchlorhydria and hypersecretion without differentiation into true gastric juice and dilution secretion; in fact, Bickel could know little of the latter, if dependent on food, for in his experiments no food entered the stomach to excite it. There seems to be ample ground for the contention of Strauss, since in hypersecretion there is a lowering of the freezing point and specific gravity of the gastric contents even when the test breakfast has been given after the stomach is thoroughly washed out. Fat causes no flow of gastric juice as explained by the Pawlow school, because the latter, outside of the very tiny

amount of steapsin which it contains, has no digestive influence on fat; furthermore, added to protein food in the form of butter, neither in the normal individual nor in the sufferer from hypersecretion does the mixture call forth as great a flow of gastric juice as the same amount of protein food alone; we can hardly speak of an insoluble substance as affecting the freezing point of gastric contents, but on account of its lesser weight than water it certainly affects the specific gravity of gastric contents by requiring less of the gastric juice to grant to those contents the same commensurate weight as that of the blood; hence fat which has proved very effective in the treatment of both hypersecretion and hyperchlorhydria may act by its physical properties rather than by its influence or lack of influence on the reflex stimulation of gastric juice. Just why this increased secretion of gastric juice should be associated with any symptoms at all is doubtful; it is usually the concomitant of a neurosis in which apparently all functions, muscular, sensory and secretory, are exaggerated. The digestion in a normal individual is carried on with a slight increase in metabolism and a rise of temperature, and in individuals in whom the process is exaggerated, demonstrable to us at present only by increased gastric juice, but possibly in the future by other evidence, we may well expect signs of fatigue like headache, insomnia or the unrefreshing sleep of those who awake "as weary as when they went to sleep." Hence, if we can only check one of these exaggerated functions, secretion, be it of the stomach or the kidney, for the "urina nervosa" is also well recognized, we shall, to some extent at least, stop the leak of nervous energy. Bed, while efficacious in impaired gastric motility, especially in those impaired in weight by avoidance of food or those with thin abdominal walls and general ptoses, does not seem to agree with those sufferers from hypersecretion; milk, whether on account of its fat or liquid character, acts admirably, and, as there is usually no question of impaired motility, can be given in large quantities. On account of the excessive susceptibility of the gastric glands to normal stimulus, three meals only per day are more desirable. The medicinal treatment, as has been mentioned, consists of the employment of belladonna, atropine, or, better, its methyl nitrate to neutralize the over-susceptibility of the secretory mechanism.

## THE FUNCTIONAL SPINE.*

BY JOHN D. ADAMS, M.D., BOSTON.

THE diagnosis of osteo-arthritis is made in a number of the back cases we see in clinical work. The presence of one or two of the classical symptoms of that disease will not allow many to jeopardize the advantages of early treatment, but results show many times that the symptoms present do not justify the diagnosis of osteo-arthritis. Should we make a diagnosis of osteo-arthritis without the verification of x-ray findings? With the high standard of x-ray work existent, is it not possible to recognize and interpret pathological conditions in bone sufficient to produce the localized symptoms — pain, muscular spasm and limitation of motion? Whether the condition present be of muscular, nervous or bony origin, the classical treatment of supporting the back with jacket or brace is acceptable to all of these conditions, but is it always justifiable?

All the cases we see in clinic work are from the laboring class and illustrate the predisposing factors of either exposure inconsistent to the power of resistance or occupation demanding the constant use of the back, which in time becomes excessive to its capability, or, more probably, a combination of both.

The function the back performs in the pursuance of work among the laboring classes is an important one, and being incapacitated in any way is of vital importance. Pain and discomfort in these cases are not always true indicators of the condition present, as the degree of tolerance varies with each individual.

The average person of the laboring class is, on the whole, rather tolerant of a moderate amount of pain. He resorts to proprietary medicines and plasters, from which he may receive some temporary relief, before he finally presents himself at the clinic, either wholly or partially incapacitated for work.

Subjectively, the patient places his hand over the region of the lower dorsal and upper lumbar spine as indicating the area of pain. He describes it as being in the nature of an ache and a stiffness on attempting to straighten up from a stooping posture. He notices it most on getting up in the morning, it taking him some time to get limbered up, as he expresses it.

Examination shows voluntary limitation of motion in the spine as evidenced by flexion in all directions being stopped by muscular spasm. Especially is this noticeable on forward and lateral bending, but hyperextension, where the spinal muscles are relaxed, is not limited. Now, by forcing the patient to full lateral and forward bending, disregarding the pain, and, to a certain extent, overcoming the spasm, it will be noticed that the spine itself is capable of practically full motion in all directions. In other words, we have a functional back, pure and simple, to deal with. Now assuming that the x-ray is negative, what are we justified in doing in the way of treatment for this patient? It is safe to say that early in his affection he has resorted to the proverbial plaster and may possibly have gotten some temporary relief. He has also tried all of the patent liniments on the market and had his quota of antirheumatics, and, finally, in sheer desperation, seeks out the hospital clinic.

Many of these men are teamsters riding on swinging or spring seats. Some are longshoremen, engineers, tailors, etc., but suffice to say that in all the character of their work necessitates the constant use of their back muscles. This strain is often enhanced by inclement con-

* Read before the Mt. Sinai Hospital Clinical Society, Oct. 13, 1910.

ditions, such as sudden change of temperature or exposure to heat and cold.

The natural internal resistance in the normal healthy individual will often conceal any ordinary abuse to a given part of our anatomy, but finally nature rebels, and that is the condition of affairs we have in this class of cases.

The one principle in the treatment of this class of cases is obviously that of rest. This should be accompanied, if possible, by a method which does not incapacitate the patient for work. Naturally the simplest course would be absolute rest in bed, but that is out of the question, for there is a family to support in the majority of cases, and the danger of losing work. Invariably the suggestion of strapping the back is treated with contempt accompanied by the expression, "Oh, I have had that done, and although it felt better for a time, the pain returned as bad as ever." The next procedure is usually that of a plaster jacket. Now a plaster jacket, intelligently applied, with all the necessary requirements for efficiency, is at best a cumbersome, uncomfortable thing to wear, and although we may gain our principle of support, and to a certain extent relief of symptoms, there are certain untoward effects which bring it within the pale of criticism. It is unnecessary to state that the atrophy of disuse is a factor to be avoided, and it certainly does take place in immobilization. Also, the spine is splinted in an area the use of which is very necessary for the satisfactory performance of the patient's work, certainly within the limits of comfort and efficiency.

At the end of such treatment we are confronted with the problem of a chronically weak back, ill supported by the weak muscles, and a constant source of complaint. It has been the writer's experience that there is a growing resentment among such patients to the encumbrances of any such apparatus. This is all based, mind you, on the assumption of the absence of any bone involvement.

The next alternative is that of a belt, reinforced with light steel, and, should apparatus be needed for muscular support, in this are incorporated all the necessary qualifications devoid of appreciable weight and allowing enough freedom of movement to be consistent with comfort and efficiency. Its advantages over simple strapping are that it encases the body in such a way as to act as a purse string, thereby producing equal pressure and fixing the muscles much more efficiently than when we attach adhesive plaster to two sides of the pelvis, which are both movable.

The second principle of treatment is that of counter-irritation, and the various agencies by which this may be produced are well known to us all. The writer wishes to offer a report of twenty-five cases treated at the Boston Dispensary and in private practice. These cases were all routine, unselected; occupation — teamsters, tailors, day laborers, namely, those men employed in a vocation necessitating constant use of the back. All of them presented the classical symptoms of pain, muscular spasm and limitation of motion in varying degrees of intensity. In all the x-rays were negative. Five of the cases were treated three times a week with fly blisters, five with actual cautery, five with strapping, five with plaster jacket and five with heat. The treatment was continued over a period of two months. All were treated personally by the writer, and clinically the results showed conclusively that those treated by heat improved much more rapidly and efficiently than any of the other groups. In fact, at the end of two months all were put on baking.

The apparatus for baking was constructed as follows: A small wooden box 18 by 20, the top being left open, lined with asbestos to prevent radiation, fitted up with six sixteen-candle-power electric lights. The sides were curved to fit the outline of the back. The box was then placed on an upright on the wall and rendered adjustable to any height by a moveable peg in a series of holes in the upright. The patient was then placed on a stool and the heat applied to the area to be treated. The heat was applied to the bare skin, temperature of 300°, for a period of fifteen minutes.

The result showed a marked hyperemia with excessive perspiration and with relief from pain. There were no burns and no untoward effects. The intervals of application were gradually lengthened in accordance with the diminution of symptoms. In most every case a light pelvic belt was applied as an adjunct to this treatment.

In conclusion, the writer would state that in treatment there is nothing new offered, but results show that there is a certain class of occupation spines which, through vocation, present a functional disability, and if we have no facts to sustain an organic or bony change, we are not justified in splinting the back to the extreme detriment of its future capability. We may have present the classical symptoms of muscular spasm, limitation of motion with affection of either nerve, muscular or bony origin. With a muscular strain the spasm present is more or less of a voluntary nature and may be largely eliminated by tolerance of pain in motion, whereas should the affection be of bony origin, the patient has no control over the muscular spasm. It has been the writer's experience to see far too many cases tied up in rigid apparatus, with its untoward effects, where results have shown that they would have been far better to have supplemented a light support with counter-irritation.

## Clinical Department.

### INSTITUTIONAL FORMS OF MANIC-DEPRESSIVE INSANITY.*

BY IRWIN H. NEFF, M.D.,

*Superintendent Foxborough State Hospital, Foxborough, Mass.*

THOSE who are concerned with the care and treatment of the inebriate can appreciate that inebriety is primarily a nervous weakness and

* Read at the September, 1910, meeting of the New England Psychiatrical Society.

that on this weakness is engrafted a habit which can be held accountable for the syndrome which we call inebriety. The inebriate is, as it were, a sum total of his personality and of the symptoms directly related to alcoholism. In many cases the condition is an exaggeration of the characteristics of the patient.

It should be understood that this weakness antedating the alcoholic symptoms often manifests itself early in the life of the patient and is shown as a peculiarity, idiosyncrasy or eccentricity and is not recognized as a marked departure from the normal standard. These peculiarities may seem to have no particular significance, but it is equally true that if critical analyses of these cases had been made it would have been shown that in some individuals an "insane diathesis" might have existed which could have been held responsible for the periodical or occasional outbreaks of drinking.

It should be generally recognized that inebriety is a condition, or, more properly speaking, a syndrome which necessarily must show a varied etiology; therefore it is not surprising that a certain percentage of these cases prove on examination to be psychopaths which may very properly be placed in well-defined insanity groups. When this is proven we can justly say that inebriety is an expression of inherent defects, which defects may be of a psychopathic or neuropathic character.

We have observed such an analogy in not a few cases and have diagnosed manic-depressive insanity in three of our patients. The psychosis has been suggested approximately in fourteen individuals, but, owing to incomplete history and the impossibility of securing authentic after history, ten cases are eliminated from this series. It seems worthy of note that all the cases of this group were sent to the hospital as frank cases of inebriety; apparently the pathological mental symptoms were unrecognized or disregarded by the examining physician.

It is not believed that our experience is unique or that it differs in any degree from the experience of other institutions, as well-defined mental diseases are not infrequently seen in institutions other than those caring for the insane. The classical types of insanity are not uncommonly found in prisons, almshouses, charitable institutions, sanitaria, etc. Often the insanity is not detected until late in the history of the case, although the alienation may have been intimately related to the crime, misdemeanor, defect or disease.

Further comment is reserved to follow the abstracts of the three cases of manic-depressive insanity associated with inebriety.

CASE No. 1.

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|---|---|
| Case number, | 4229. |
| Residence, | Westboro. |
| Birthplace, | Salmon Falls. |
| Age, | 60. |
| Occupation, | Shoe cutter. |
| Civil condition, | Married. |

*Physician's certificate.*—"Reported by others that he would get whiskey and shut himself up in a room until he drank the whole of it, getting intoxicated, abusive and using obscene and violent language.

"Observed by me that he was very nervous and excitable; said that he would give anything for a drink; did not seem as if he could get along without it."

*History as given by others.* — From commitment paper: "Was at a Massachusetts insane hospital for six months as a voluntary patient for nervous treatment; he was called a hypochondriac there; he left the last part of July, 1907. His mother died insane and he had a half-uncle (his mother's half-brother) who was insane; was an occasional drinker up to four years ago; constant at present. Cause of intemperance: 'Supposed to have begun in order to assist a nervous condition of the stomach.'"

*From family statement.* — "No intemperance known in relatives; mother died of pneumonia; cause of father's death unknown; one brother died when a boy. Patient has nervous dyspepsia; says he was told a little whiskey would help the stomach, and so contracted the habit; prefers solitary indulgence; has used asafetida tablets; has talked much of suicide."

Secretary of Overseers of the Poor states as follows: "That he has not been a hard drinker until within the last year or two; has never worked to speak of; sister helps him; thinks he has drunk more or less always, but more since we became a licensed town."

*Hereditary history.* — Father disappeared when patient was two years of age; mother died of pneumonia at the age of seventy-nine; was quite nervous, worried over trivial matters; two sisters and one brother died; one brother and two sisters are living, in good health. One maternal uncle had several attacks of mental depression and was under treatment in asylums. One younger sister is quite nervous. Patient says that all members of his family are of a nervous disposition.

*Personal history.* — As a baby and child was never strong or rugged; was considered quite "nervous"; although he went to school between the ages of six and fifteen, his schooling was intermittent; since his school days he has worked on a farm, in the shoe business and as an ordinary laborer. At the age of thirty-two was married; has no children. His wife eloped with another man after eighteen years of married life. Has had no severe physical disease, but has had attacks of "nervous dyspepsia" since the age of twenty-four. Has a hernia of some years' duration.

Was under treatment at asylum from December, 1906, to August, 1907; while there he had an attack of depression characterized by emotionality and delusions of unworthiness; he does not believe that he entirely recovered from this. Since his discharge from the asylum he has worked on a farm, in a lumber factory and at ordinary laboring work.

*History of present illness.* — In 1898, after desertion by his wife, his attacks of gastric trouble became more pronounced; on account of extreme nervousness from continually bemoaning his fate, in order to forget himself and modify his nervousness he began to drink and he soon found that he had a craving for drink; at times would take a pint of whiskey during the day; again he would go two weeks without drinking; his drinking bouts have always been irregular and have been impulsive; he says that he drinks in order to drown his sorrows and dissipate his feeling of depression; after he drinks he always becomes exhilirated; during the past six months he has had three attacks of mild delirium of short duration.

*Admission note.* — Is quite nervous, somewhat garrulous and his conversation is circumstantial and spontaneous; is anxious to tell of his experiences and

it is evident that there is introspection of hypochondriasis; has some insight into his condition and says that he is anxious to overcome his craving for drink as he is conscious that it is detrimental to him in every way.

*Inspection and physical examination.* — Man of average height; general muscular development fair; head well shaped; forehead broad and straight; face long; eyes blue; sclera clear; arcus senilis and arteriosclerosis present; abdomen prominent; left inguinal hernia; ears large and well shaped; left shoulder a little higher than right; co-ordination good; pupils react normally to light and distance; teeth, many missing; tongue clean and somewhat tremulous; knee-jerks sluggish. Lungs negative. Heart negative. No change in liver dullness. Inguinal glands normal.

*Before staff, Dec. 19, 1908.* — He does not believe that his condition is different than one month ago; has noted that there have been times since admission when he has been depressed and at other times felt more happy and contented. Depression following retrospection. Says, upon being asked, that he has been a good man excepting for drink. Went to the asylum on his own volition to get over nervousness; has been troubled with nervousness for sixteen or eighteen years, long before he began drinking. Began to notice that small things upset him and at such times could not work as he was too nervous, these periods of nervousness coming on at intervals from two to three weeks; ten years ago stopped work on this account; has found it hard to begin any work, but when started he wanted to rush through it; never is real happy and has not been since family troubles begun. Wants to sit by himself when depressed periods come on and tries to throw them off; when in this condition sleeps poorly; believes he will never be better. Longest attack was of three or four months' duration, sixteen years ago, and has had many attacks of two and three weeks' duration since; thinks drinking has made him more nervous and admits that he has had ideas of self-destruction, but has been able to control them.

Diagnosis: Manic-depressive insanity, eighteen years' duration.

It is believed and acknowledged by him that his insobriety was the result of nervousness, patient resorting to stimulants to modify despondency or abort depressive attack.

*Recapitulation.* — Man, age sixty; family history of insanity; manic-depressive syndrome developing at age of forty-two, preceding the alcoholic symptoms, inebriety developing at age of fifty coincident with "nervous dyspepsia" (gastric symptoms of mental depression); patient resorts to stimulation to modify or abort mental depression. Previous treatment at a Massachusetts hospital for the insane. Diagnosis: "Hypochondria." Patient eventually secures admission to an asylum as a voluntary case.

## Case No. 2.

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|---|---|
| J. D. L. | |
| Case number, | 4641. |
| Residence, | Boston. |
| Birthplace, | Connecticut. |
| Age, | 52. |
| Occupation, | Caretaker. |
| Civil condition, | Widower. |
| Commitment, | Voluntary. |

Abstract of former history:

Admitted Nov. 14, 1903. Discharged Nov. 29, 1904.

At time of admission it was stated that he had been a periodical drinker for twenty-three years. It was also reported that he showed the effects of inebriety of many years' duration.

Physical examination at time of admission was of negative value.

Experienced the usual effects of excessive drinking, but rapidly recuperated.

March 6, 1904, was allowed to go on a visit; March 9 was returned by an attendant in intoxicated condition.

*Hereditary history.* — Father is living at age of eighty years; is in good health and has always been temperate. Mother died at age of twenty-five years of puerperal fever. Patient is only child by first marriage; father had three children by second marriage; all are in good health; no defect. Grandparents were long lived and healthy. A few maternal relatives were somewhat weak, but defect is not specified. Paternal relatives were robust. No history of inherited disease.

*Personal history.* — As an infant and boy was delicate and developed slowly; was quite nervous until the age of eleven years; had an attack of typhoid fever; convalescence was protracted; after recovery developed rapidly and became considerably stronger. Received but little parental training.

Went to school from ages of six to fifteen years, going through grammar school; afterward worked in a grocery store for thirteen years, then was a meat cutter until six years ago; since that time he has been a janitor, caretaker and farm laborer.

Was married at the age of twenty-three years; wife died two years ago; has three children who are grown up and in good health. Has experienced no accident. Has been arrested twice for drunkenness and placed on probation.

After discharge from this hospital he refrained from drinking for five months; since that time he has drunk periodically. Had Keeley Cure treatment some years ago and during the past two years has been treated by Emmanuel Movement.

*History of present illness.* — At the age of twenty-three years drank occasionally; had a liking for liquor, but worked steadily and was not incapacitated; habit has been confirmed during the past twenty years. While for a time he drank irregularly, he has during the past nine years been a periodical drinker; of late periods have developed every six weeks. Experiences the usual effects of alcoholism with a pronounced feeling of depression. This despondency also exists just before his drinking period, which he describes as a "fit of melancholy." Believes his drinking is the result of an effort to dissipate this feeling. Acknowledges, however, that occasionally he has drunk when this feeling was absent. This feeling of depression is to a great extent dependent upon his environment, work and physical condition. An examination of the patient showed quite clearly the mental stigmata of neurasthenia. Three weeks ago experienced an attack of depression and resorted to alcoholic stimulation.

Four days previous to his admission to the hospital he consulted the superintendent and was advised to return for treatment.

*Inspection and physical examination.* — Height 5 feet 7 inches. Muscular development good. Subcutaneous tissue moderate. Face angular, deeply lined, nose prominent. Skin dry and smooth; some moles on head. Ears of moderate size, set close to head. Upper teeth missing; tongue coated. Palate broad and arched; pupils equal, slight arcus senilis. Glands not generally palpable. Chest well-developed. Station erect. Pupils react to light and distance; knee-jerks present. Romberg's sign negative. Heart negative. Lungs negative. Abdomen: Right inguinal hernia, moderate size. Extremities negative.

*Admission note.* — Patient is at present free from the effects of alcohol; gives a good, clear sequential history; says that he has been examined by many neurologists and has been told that his drinking is an expression of mental disease.

Patient was finally discharged from the hospital, as not to be benefited by further treatment, on May 13. When patient left hospital his condition was one of marked depression, which had existed for some weeks; it was learned shortly afterward that he had been arrested for drinking and committed to a penal institution.

After-history of case would show the same variability in emotional condition. On several occasions has called at the hospital and at the present time has been abstinent for two months. Patient, however, fears a return of depression and feels sure that when it recurrs he will relapse.

*Recapitulation.* — Man age fifty-two; attitude that of a pronounced psychopath; possible history of neuropathy on maternal side; retarded development and nervousness during childhood; inebriety developing as periodical drinking at the age of twenty-three, with a history of precedent depression; drinking occurs simultaneously with attacks of mental depression.

CASE No. 3.

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|---|---|
| J. M. H. | |
| Case number, | 4069. |
| Residence, | Boston. |
| Birthplace, | Boston. |
| Age, | 26. |
| Occupation, | Lawyer. |
| Civil condition, | Single. |

*Physicians' certificate.* — Reported by others that "he has been drinking periodically for years; he has had much done for him and has failed to keep sober." Observed by me that "we have both examined him before; we have known of his drinking habits for some time. He shows evidence of recent drinking, which he admits. He consents to go to Foxborough."

*Hereditary history.* — Mother is a decided neuropath; two sisters show peculiarities; maternal grandmother was peculiar; there is apparently an inherited maternal defect; father was intemperate.

*Personal history.* — Patient was usually healthy during childhood; no physical defect. At pubescence he developed a pronounced ego and was unduly optimistic; these conditions were periodically in evidence, he was unquestionably precocious and early developed rhetorical and oratorical talents. Relatives and friends noted this occasional "accession of spirits," but believed it to be due to drinking tendencies, which began at the age of seventeen. At this age he associated with dissolute companions, drank to excess and was frequently intoxicated. For some days preceding his alcoholic debauches patient would talk extravagantly, show extravagancies in conduct and would continuously seek notoriety; excesses of various kinds would be perpetrated; during these exhibitions he would frequently commit some misdemeanor, calling for assistance from relatives and friends; these irregularities were believed to be due to inebriety and accordingly patient was committed to this hospital.

Examination on admission to this hospital showed no physical defect and there was no evidence of physical disease. Four months after admission to hospital patient came under my direct charge. His expression and attitude indicated inordinate self-satisfaction, which was manifested in conduct and speech. He frankly admitted his many misdemeanors, but claimed justification; he also made plausible excuses for his misconduct. He was able to make an accurate and searching analysis of his case. He admitted fits of despondency succeeded by unusual boyancy, but believed that this emotional exaltation was reactive, did not appreciate that it was pathological, and believed that he should be held responsible at all times for his conduct.

During the time patient was under my observation he was irregularly depressed and elated. During elation was garrulous, circumstantial and proposed and carried into execution many extravagancies of conduct. When patient was depressed he was unwilling to engage in work or diversion, quite reticent, introspective and occasionally talked of self-destruction; these changes were appreciated by patient; there was no true insight; patient was sensitive and suggestible; slight departure from daily routine would produce at times a marked reaction. Several times he left without permission and, owing to his mild aggressiveness, was given final discharge as not to be benefited by further treatment at the hospital.

*Recapitulation.* — Man aged twenty-six; pronounced neuropathy in family; irregularities in conduct and peculiarities during pubescence; excessive drinking since the age of seventeen; irregularly depressed and elated, the alcoholism being coincident with elation; not benefited by hospital treatment; discharged seven months after admission.

*After-history.* — Seen nine months after leaving hospital and it was found that patient had conducted himself well; was engaged in remunerative work and had been abstinent for five months; patient, however, appreciated emotional changes and volunteered the information that during the nine months he had had several mild attacks of depression, but no attack of elation. Seventeen months after discharge family stated that patient has relapsed, has again shown silliness in manner, and given evidences of impaired judgment; it would appear that each succeeding attack of elation is more pronounced.

The diagnoses of these cases is a matter of little difficulty if one bears in mind the character of the two phases of manic-depressive insanity. The depression of manic-depressive insanity requires to be differentiated from the depression seen in dipsomania and that often preceding an attack of periodical drinking. The depression of dipsomania and periodical drinking is characterized more by anxiety, restlessness and an uncontrollable obsession. The general inhibition and introspection seen in cases of manic-depressive insanity is not observed. The elation of manic-depressive insanity also requires to be differentiated from the rapid ideation and disassociation of alcoholism. This often requires an accurate clinical history and a close observation of the individual case.

In two of these cases the excessive drinking was coincident with the depressed period; in the remaining case the elation and inebriety occurred simultaneously.

It would, therefore, appear that cases of manic-depressive insanity, mild in type, but with a characteristic and classical syndrome, are often unrecognized. It is obvious that if such a condition were detected in its incipiency improvement might result from treatment, and the degree of responsibility of these cases might be more accurately determined.

Physicians who have observed and studied such cases will recognize that the symptoma-

tology corresponds quite closely to that described as "hypomania" and will bear me out in the statement that it is often extremely difficult to secure the commitment of these cases to a hospital for the insane, as the patient's proper mental status is not understood by the average jury of laymen.

## COMMON SALT AND FLUID RETENTION. A CLINICAL EXAMPLE.

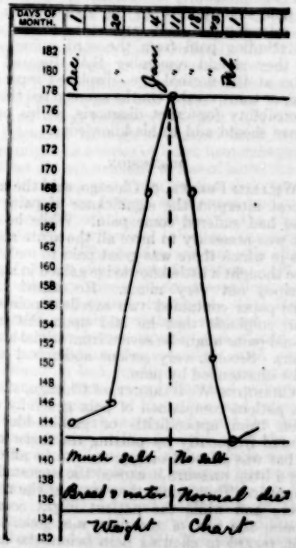
BY EARL D. BOND, M.D.,

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THE case following seems to show in an unusually clear way the influence of common salt in building up edema.

The patient was a man of twenty-five; his mental diagnosis, dementia precox of the paranoid type; he was clear, polite, quiet.

About a month after entering this hospital he manifested delusions about his diet. These at first caused him to give up meat, and then, for six months, to take only seven slices of bread and one and a half pints of milk and cream at each meal, with the result that he lost 20 lb. By insisting that he take, in addition to the foregoing, six glasses of eggnog a day, most of his loss in weight was made up during the next month, August. For September and October he returned to his bread and milk diet, and for a short time in November took only bread and water. On Dec. 1 he was taking




twenty thick slices of bread, water, three glasses of milk and some olive oil each day. About Jan. 1 it was noticed that he was sprinkling salt over his bread to take the place of butter. In twenty days his weight increased 32 lb. His legs and genitals were found to be enormously distended with fluid. There were a few moist râles in the bases of the lungs behind. The abdomen was free from fluid. There was absolutely no trace of edema about the eyes; no headache. He was compelled to take a fairly normal diet from which free salt had been excluded. On the first day he lost 10 lb., and in six days 27 lb. During the next seventeen months, to the time of his death from typhoid at another hospital, there was no recurrence of edema.

The question comes up as to what part the kidneys and heart played in producing this condition.

A year before the edema the twenty-four-hour amount of urine was 600 ccm., specific gravity 1.024, and showed the slightest possible trace of albumen and a very few granular casts. At the height of the edema there was a change to 2,285 ccm., specific gravity 1.014, neither albumen nor casts; and as the last of the edema was disappearing the readings were 2,150 ccm., specific gravity 1.013, the slightest possible trace of albumen and no casts. In the absence of subjective symptoms, with no sign of puffiness in the face, and with no tendency to dropsy before or after this one episode, the urinary findings do not seem sufficient to diagnose a nephritis.

Again, a year before the edema the patient's heart showed sounds distinct and free from murmurs, accentuation neither of the aortic or pulmonic second, a dullness well within normal limits. The pulse was irregular in rhythm but regular in force; the artery wall could not be felt. At the height of the edema the cardiac dullness still seemed within normal limits; there was, however, a faint systolic murmur at the apex and an extremely sharp ringing aortic second, with a pulse of high tension. When the edema had gone, the murmur disappeared, the aortic second lost its ringing quality and remained very slightly accentuated. It seems fair to conclude that the heart and arteries were efficient and were not in themselves the cause of dropsy.

The explanation that the unusual amount of salt was the causative factor is perhaps too evident. It is interesting to see what observations have been made along this line. In the laboratory Cohnheim [1] and then Reid [2] demonstrated that sodium chloride passes easily from gut to tissue spaces, but with great difficulty in the opposite direction. Starling [3] explains that this salt, stored in the body, takes up enough water to maintain the normal concentration of the body fluids; that there is almost no diuretic effect and no such efforts to drive off the salt as follow the presence of sugar, for instance, in the blood.

Clinically, Widal and Javal [4] have been able, in nephritic patients, to cause an edema to appear or disappear at will by increasing or decreasing the chlorides. In individuals with apparently normal kidneys, following the ingestion of salt Miller [5] found chloride retention, gain in weight, but no visible edema.

On the therapeutic side, Widal and Javal have shown that the drugs which are considered the best to re-establish diuresis in nephritics, such as theobromine and its derivatives, are precisely

those which have the most powerful action in removing chlorides from the body; that the value of milk as a diet lies in its lack of chlorides, and that solid foods do just as well if the amount of salt in them is kept low.

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[3] Starling: "The Fluids of the Body," p. 153–4.
[4] Widal and Javal: Jour. Physiol. et Path., 1903, no. 5, pp. 1107, 1137.
[5] Miller: Jour. Am. Med. Asso., no. 45, 1905, p. 1915.

## Reports of Societies.

### MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

THIRTY-SIXTH ANNUAL MEETING, HELD AT DETROIT, MICH., SEPT. 13, 14 AND 15, 1910.

THE President, DR. FRANK P. NORBURY, Hospital, Ill., in the chair.

After invocation by REV. EDWARD H. PENCE, and addresses of welcome by HON. PHILIP BREITMEYER, mayor of Detroit; by DR. J. H. CARSTENS, president of the Michigan State Medical Society, and by DR. A. D. HOLMES, president of the Wayne County Medical Society, which were responded to on behalf of the association by DR. EDWIN WALKER, Evansville, Ind., the Medical and Surgical Sections convened for the reading and discussion of papers.

#### PAIN IN ABDOMINAL DISEASES.

DR. WILLIAM M. HARSHA, of Chicago, stated that in order to interpret pain properly, a careful history of the case was necessary as pain must be considered in relation to other factors in a given case, and without these it lost its chief importance. The relation of pain to taking food was also of great value, particularly in duodenal or gastric ulcer, or the various stenoses, benign or malignant. The direction and extent of painful radiation and the association with the hyperesthesia, local tenderness and muscular rigidity were of the greatest importance both as indications of the site and gravity of the lesion. The arm pain in angina pectoris, the shoulder or upward radiation in gall-bladder disease, and downward, forward and testicular pain in nephritic colic were well-known examples. The pain of abdominal disease might be either spontaneous or elicited by pressure, body movement or position, and it might be influenced by psychical, thermic, mechanical or chemical means, all of which might be utilized in cases to aid in exact diagnosis. Diseased viscera caused pain at or near their various sites, but there were many exceptions which lent importance to the reflex or referred pains. In most visceral lesions there was a disturbance manifested variously by pain, tenderness, hyperesthesia or muscular rigidity on certain areas of the external or protective portions of the body. As moderate shock or fright would emphasize a vanishing or latent pain, he had tried the faradic current in suitable cases, and in two instances he had been able to locate more definitely the trouble. A great majority of abdominal diseases, especially of the more acute variety, were first heralded by pain rather than by change of size, position or other physical conditions. The surgeon could often gauge the urgency in a given case by the character and severity of pain. Taking cognizance of the value of pain associated with local distentions and peristalsis, or the absence of peristalsis, they might locate a stenosis or other forms of obstruction, calling to their aid submerged palpation, or palpation in the bath, which would enable them to detect induration which was otherwise not palpable. By observing the time relation of pain to other symptoms, the effect of food, drugs, cathartics, cold, fatigue, movement, position, jarring, fist percussion, anesthetics or electric stimulation, they should be able to increase the percentage of correct diagnoses.

The safety of abdominal section might have caused them to relax their efforts at exact diagnosis. It had happened many times that laparotomy had been done for appendicitis when a movable kidney, pyelonephritis, ureteral stone, typhoid fever, diaphragmatic pleurisy, salpingitis or other conditions were present. Age, sex, occupation or previous history might give valuable aid. In childhood intestinal troubles prevailed, and they were likely to encounter appendicitis, intussusception or tuberculosis, and in advanced age malignant disease. In women the pelvic organs were frequent sites of disease, while gallstones were more frequent. Lead colic might simulate organic disease. A history of indigestion, with vague epigastric pain, might aid in determining a perforation of the duodenum or stomach, and a record of previous inflammatory trouble in the abdomen might explain a sudden intestinal obstruction. Among the less frequent conditions might be mentioned the meteorism with abdominal pain resulting from the embarrassed portal circulation in cardiac insufficiency. He had recently seen a case of this kind where the pain was so pronounced and distention so great that abdominal tumor was suspected by one physician. They should consider the possibility of disease of the central nervous system, such as tabes, herpes or hysteria, disease of the spine, as caries, or spondylitis deformans. They should also consider the possibility of disease of the thorax, referring pain and rigidity to the abdomen, or to one kidney, referring the pain from stone to the opposite side. Excluding pain from the cord, spine or reflex causes, they should remember that diseased viscera might be at the normal site, displaced especially by prolapse, or transposed. On the surgeon fell the burden of responsibility for exact diagnosis, as his operative experience should add to his knowledge.

#### DISCUSSION.

DR. WILLIAM FULLER, of Chicago, said the man who could best interpret the significance of pain was the one who had suffered some pain. While he did not think it was necessary to have all the acute abdominal diseases in which there was great pain to make a diagnosis, he thought a little knowledge gained in a practical way helped out very much. He stated that Dr. Harsha's paper contained two excellent points. First was the emphasis that he laid upon the fact that abdominal pains might be severe from trivial abdominal affections. Second, very serious abdominal affections might be unattended by pain.

DR. CHANNING W. BARRETT, of Chicago, stated that when a patient complained of pain generally over the abdomen from appendicitis or gall-bladder trouble they found frequently by putting the finger upon the point that was affected or supposed to be affected and making a little pressure it caused the surrounding pain to disappear. They could then go over the rest of the abdomen, and while the patient might complain of local pain, the rest of the pain was gone. Another point in regard to eliciting pain before the anesthetic was given. An anesthetic was of great value sometimes in pelvic conditions and abdominal conditions, but he thought they gained more knowledge of pelvic and abdominal conditions by examining the patient first without an anesthetic, finding out all they could, and they found then in giving an anesthetic some things

that were apparent before the anesthetic had disappeared.

Dr. L. W. Bremerman, of Chicago, stated in diseases of the kidney or the ureter, he had seen cases in which there was hematuria, with marked pain over the region of the kidney, the kidney being felt on palpation, excessive tenderness over the kidney, a kidney lesion diagnosed, and surgical intervention recommended. Upon cystoscopic examination of the individual, he discovered that the hematuria was developing from the supposedly healthy kidney, the urine from the supposedly diseased kidney being normal. Every method of examination should be resorted to before an absolute diagnosis was made.

Dr. Harsha (closing) stated the thing that most impressed him in studying this subject was the need of considering three or four different sources of abdominal pain. First, the central nervous system; second, the spine; third, the reflexes, and fourth, the visceral diseases themselves.

### THE CAUSE AND SIGNIFICANCE OF TUBAL RUPTURE IN EXTRA-UTERINE PREGNANCY.

Dr. Channing W. Barrett, of Chicago, read a paper on this subject in which he drew the following conclusions: (1) Pregnancy which was considered to be always extra-uterine in the beginning assumed pathologic significance when it underwent ectopic attachment. (2) The ovum attached in the tube had a parasitic action, having a malignant tendency in that it destroyed maternal tissues, embedded itself in the tube wall and tended toward death of the mother, but in "making its bed dug its own grave." (3) The growth of the ovum or enlargement of dead ovum mass, together with the destruction and thinning of the tube wall, led to almost certain rupture of the tube. (4) The primary rupture might be partial and even slight, or it might be complete and even fatal. (5) If complete, a subsequent rupture or subsequent ruptures were the rule. (6) With rupture free hemorrhage more or less severe occurred, which was never to be looked upon lightly and which might prove fatal. (7) The loss of blood might be through one rapid fatal hemorrhage or there might be a series of lesser hemorrhages. (8) If the patient did not succumb to loss of blood the presence of the blood and the ovum in the abdominal cavity acted as irritating foreign substances leading to loss of function and pathologic changes in the viscera, and perhaps to local or general infection, thrombosis, embolism, etc. (9) The dead ovum was only slightly less harmful from the standpoint of infection. (10) A study of the pathology made all treatment looking toward killing the ovum appear irrational. (11) Patients in good condition with or without ruptures were almost certain to have future trouble and should have an operation as soon as was consistent with good work. (12) Patients in bad condition with concealed hemorrhage from the cause in question had collapse in proportion to the amount of blood lost, and rational treatment must look with certainty toward the stopping of further hemorrhage. (13) An opening of the abdomen with clamping or ligaturing of the vessels was the only reliable means of controlling internal hemorrhage, and if done rapidly and with care was little tax upon the patient. (14) The clinical experience of the world and a study of the pathology of this condition pointed to the danger of delay. (15) The more desperate the case while the patient yet lived, the greater the call for immediate action.

#### DISCUSSION.

Dr. Edwin Walker, of Evansville, Ind., stated he fully agreed with the essayist, and so far as his personal knowledge went, he knew of one death from repeated hemorrhages; but most of the deaths had been in delayed cases in which sepsis had occurred after operation. The teaching that they should wait in these cases was not sound. He felt that the position taken by Robb was untenable. Those patients that had been operated upon promptly, in his experience had recovered.

Dr. Joseph Rilus Eastman, of Indianapolis, Ind., stated this was 1910, and it was a pity that it was necessary for Dr. Barrett to present a paper like the one he had read. The teaching that it was wise to allow a woman to bleed into her own abdomen, or into her tube or uterus, while the surgeon stood by with his arms folded and fell back upon soft pillows or relied on Providence, was absolutely pernicious. If a vessel were bleeding upon the surface of her body, what man would be so negligent or so indolent as to stand by and allow her to bleed to death?

Dr. Charles Stoltz, of South Bend, Ind., stated he thought the more energy they expended in teaching that these conditions were to be met and not dallied with, the better. The men who had received the proper teaching would recognise these conditions, and they would usually find some one who was competent to meet the conditions speedily, or they might be competent to operate themselves, because if there was any delay, or if the patient was carried from one place to another, she might just as surely die in one community as another. He did not know Robb, who said that shock meant nothing but hemorrhage, but if he made that statement, he wanted to forget it, as he would rather act upon the theory that shock was hemorrhage, and hemorrhage was shock.

### SPECIAL POINTS IN ADVANCED EXTRA-UTERINE PREGNANCY.

Dr. Shelby C. Carson, of Greensboro, Ala., stated in this paper he directed special attention to the control of hemorrhage during the operation. Although his experience was nil, he ventured the suggestion that the operation for advanced extra-uterine pregnancy be done in two stages when necessary or advisable, at an interval of forty-eight to sixty hours, according to the judgment of the operator. In the first place, let the abdomen be opened, the child delivered, the iliac tightly compressed by metal bands, and further, to be doubly sure, the ovarian and uterine arteries clamped by rubber-covered forceps, if they could be approached. In the second stage, separate the sac, release the blood vessels after ligating the anomalous ones and closing the abdomen. Sometimes hysterectomy was imperative. This differed from and apparently was superior to the old method of uniting the sac to the incision and waiting weeks for its separation, since by this method the danger from sepsis was eliminated.

#### DISCUSSION.

Dr. J. H. Carstens, of Detroit, Mich., stated he had one woman that went to term, a general practitioner having made the diagnosis. He operated on her in two stages. The placenta seemed to be attached to the intestines and the rectum, and he did not have the courage to remove it. He thought the best thing would be to leave the placenta alone, and so he removed the fetus, separated the peritoneum with the sac and drained. The woman was septic at the time of operation, and finally died from sepsis. The placenta did not separate. Little shreds came away through the abdominal incision.

Dr. William M. Harsha, of Chicago, stated he had never heard satisfactorily explained the cause of the intense pain that came on in cases of tubal rupture.

The extent of pain and the broad radiations of it were great in comparison to the very small area apparently involved. A woman with tubal rupture suffered pain from her chest to her thighs, sometimes at least. The broad radiations, with the intense character of the pain, made it almost impossible to get from these patients a rational explanation or history. These were the cases in which he believed a good dose of morphine was indicated. It would first abolish the cardinal or reflex pains to a certain degree and helped to localize the trouble. Second, it would limit the hemorrhage, but before administering morphine one should observe carefully the character of the pain, the extent of the radiations, the time, and the urgency of the condition. After recognizing these, morphine would answer two indications, namely, to relieve the shock and put the patient in a better condition for operation, and to some degree arrest the hemorrhage.

DR. CHANNING W. BARRETT, of Chicago, said in regard to dealing with extra-uterine pregnancy that was advanced, they found that in the early months the ovum was not considered. The probabilities were that so far as the ovum was concerned it would die, and the chances were that it would kill the woman sooner or later. A few years ago they would have said that at any time during the extra-uterine pregnancy, early or late, the ovum should be removed at the earliest possible moment. The teaching had been that if the ovum had passed the fifth month, or along about there, they should wait for viability. He would be inclined yet, even in spite of the teaching, to remove the ovum when found, if it had reached a viable period, looking to the interest of the child and mother.

### REQUIREMENTS AND LIMITATIONS OF NITROUS OXIDE AND OXYGEN ANESTHESIA.

DR. CHARLES K. TETER, of Cleveland, Ohio, stated the greatest advancement in general anesthetics made in recent years had been the development and use of nitrous oxide and oxygen in major surgery, and in general surgery he had seen within the past few years nitrous oxide and oxygen come from a very limited use to one of almost unlimited application. He had been one of the foremost in advocating the superiority of nitrous oxide and oxygen as an anesthetic. He had been compelled to do so because of the almost phenomenal success he had had with it. He had administered nitrous oxide and oxygen over sixteen thousand times in all conditions and for almost every conceivable operation, and having had this practical experience, which alone was essential to appreciate the excellency of this agent, he wished to give the profession the benefit of it. It was freer from post-anesthetic complications than any other general anesthetic known. It was by far the most difficult general anesthetic to administer because of the following reasons: (1) The physical properties of nitrous oxide were such that this gas must be given from eighty to ninety per cent pure, in order that a sufficient saturation of the gas in the blood might be had to produce that change in the nerve cell which brought about the anesthetic state. (2) The anesthetic properties of nitrous oxide and oxygen were extremely evanescent. The patient could pass from complete surgical anesthesia to a conscious state within sixty seconds. The extreme rapidity of induction and elimination made the administration of this anesthetic difficult. (3) Muscular tone was maintained to a much greater extent than it was under ether or chloroform, due probably to an increased per cent of carbon dioxide in the blood.

The requirements for the proper administration of nitrous oxide and oxygen were: (1) A thorough understanding of the technic of administration and action of nitrous oxide and oxygen. (2) The apparatus must be accurate, have attachments for the administration of other general anesthetic agents, and easily sterilized.

#### DISCUSSION.

DR. L. W. BREMERMAN, of Chicago, stated that in his special work, which dealt entirely with the bladder, the ureters and kidney, or conditions involving the genito-urinary tract, he had employed as a general anesthetic a combination of nitrous oxide gas and oxygen exclusively during the last two or three years. As it became necessary to perform major surgical operations upon the aged, particularly for the removal of the prostate, he could not recommend more highly any other anesthetic than the use of nitrous oxide gas and oxygen. It produced none of the untoward or after effects, such as nausea and vomiting. The patient was usually awake before he left the operating room. It had a great tendency to reduce the shock of the operation by shortening the length of the anesthetic, and in his hands it had given perfect satisfaction.

DR. FENTON B. TURCK, of Chicago, stated some years ago he conducted a series of experiments on animals with chloroform and ether with a view of determining the changes that occurred in the blood. It was found by these experiments that there was a loss in the antibodies and ferments in the blood, and that there was diminished resistance to bacteria, as was shown by the agglutinins, precipitins and other substances which were found in the antibodies in the blood. It was found that these animals went into shock very easily in which there was a lowered condition of the blood. These experiments showed the effects of ether and chloroform on the serum itself, and two conclusions were arrived at, one being that there was an actual direct chemical effect on the serum, and the other was that biological changes took place and acted on the cells as toxins.

### FURTHER OBSERVATIONS IN ACETABULAR FRACTURE WITH INTRAPELVIC OR CENTRAL DISLOCATION OF THE FEMORAL HEAD.

DR. WILLIAM FULLER, of Chicago, detailed two very interesting cases of this class of fracture and presented for consideration a few points in a general way pertaining to this important but, as yet, imperfectly understood subject. So close was the relation between fractures and the changes that took place in the bone, whatever they might be, that all such injuries resulting from trivial or slight degrees of violence should be regarded as possibly belonging to this class. Efforts had been made by several observers to put the etiology of fractures on a physical basis by studying the mechanical capabilities of bone. The great strength of the pelvic bones, their peculiar and powerful articulations and liberal muscular supply were factors which singly and combined contributed much to the neutralization of all forms of direct violence exerted on this portion of the body. While Katz's theory of the mechanism of certain acetabular fractures would probably hold good, it was also worthy of mention that the experiments of Kusmin demonstrated that this fracture could or would not occur unless the force be applied with the femur in abduction. When the legs were kept parallel the acetabulum remained unfractured.

From impacted fractures of the femoral neck central dislocation of the femoral head might be differentiated by the age of the patient and the comparatively high degree of injury in the latter instance. The remarkably sunken appearance of the greater trochanter and its slightly altered relation to Nélaton's line were points which distinguished the dislocation. The certainty with which the femoral head might be palpated in

either of the anterior dislocations of the femur and its increase in length in the thyroid dislocation would serve to differentiate any one of these dislocations from a central one. In the dorsal dislocation, especially to one above the obturator internus tendon, the trochanter was far above Nélaton's line, the thigh was adducted, flexed, and the axis of the dislocated femur crossed the lower end of the opposite one. Moreover, in the simple dislocation all movements would be less free than when the head and neck occupied a central position. It was not intended that the symptoms of acetabular fracture as here given were to in the least minimize the importance of the radiograph, but that each and every manifestation of all hip injuries of whatever nature should be carefully and cautiously considered. In no instance should the clinical findings settle the diagnosis, as they were frequently misleading, and the conclusions based thereon should invariably be corroborated by the roentgenologist. In case of failure to replace the head of the femur within the acetabulum, operative interference may offer the only hope of satisfactorily dealing with such a condition; but the particular type of operation and the advantages to be gained by it would depend much upon factors opposing the reduction.

Dr. Fenton B. Turck, of Chicago, read a paper in which he described the rôle which the colon bacillus plays in acute and chronic dilatation of the stomach.

(To be continued.)

## AMERICAN PUBLIC HEALTH ASSOCIATION.

Thirty-Eighth Annual Meeting, Held at Milwaukee, Wis., Sept. 6, 7, 8 and 9, 1910.

(Concluded from No. 2, p. 62.)

### A CONSIDERATION OF VENEREAL PROPHYLAXIS IN THE U. S. NAVY FOR THE BENEFIT OF PUBLIC HEALTH OFFICIALS.

Dr. Charles N. Fiske, of Washington, D. C., stated about 50% of the enlisted personnel of the Navy had a venereal disease during an average of four years. During 1908, there were 4,681 original venereal infections which entailed a loss of service and expense for treatment of 106,526 sick days; there were 1,001 cases of syphilis, which represented nearly 7% of the total physical disability of the Navy for that year.

While the morale had steadily and vastly improved during the past ten years in other respects, the damage resulting from this class of affection had assumed such proportions four years ago that numerous medical officers no longer felt justified in waiting indefinitely for moral regeneration; they felt that military efficiency demanded activities promising more immediate results; they instituted personal prophylaxis by the use of antiseptic irrigation and inunctions following exposure and upon return to the ship or station. Certain results achieved caused the department nearly two years ago to authorise the extension of this work in connection with the customary educational propaganda, and distribution of confidential circulars throughout the service.

Sailors and marines did not contract venereal diseases from the Navy, but from civil communities which were as notoriously indifferent to venereal disease as they were to typhoid and other widespread infections. Military services had practised compulsory notification of venereal disease for years and expect civil authorities to undertake similar measures for control. The source of the Navy's 15,000 first enlisted recruits, and the destination of a similar number of men discharged each year, was the civil population; its statistics would indicate that one youth out of every six in the urban population between the ages of seventeen and twenty-four contracted a venereal infection each year.

Venereal disease had by no means yet been conquered in the navy, but there was evidence that its ravages were being materially lessened and that instead of encouraging vice through the hope of immunity, the margin of failure of this prophylaxis was sufficiently wide to deter an increasing proportion of the personnel from sexual indulgence. The desire for clean men on clean ships had been stimulated, and no sense of security had been engendered.

#### DISCUSSION.

Dr. Gardner T. Swarts, of Providence, R. I., stated last year, as president of this association, he took the liberty of appointing a committee to take up the subject of venereal prophylaxis, with the idea that the people of the country were prepared to receive instruction in these matters. These communicable diseases were preventable, and if boards of health were to conserve the public health, then these diseases should be put on the reportable list and steps taken to prevent their prevalence as far as possible.

Dr. J. S. Neff, of Philadelphia, stated he did not think it was possible to compel physicians to reveal the existence of these diseases among their patients, and they would not report this class of cases to health departments.

Dr. John N. Hurty, of Indianapolis, Ind., stated he believed that the road leading to the prevention of venereal diseases was the longest and roughest which hygiene and sanitary science had to travel. At this time, every tribe, every nation and people of the earth were thoroughly syphilised. Think of that, and now we were proposing to eradicate it. The first man to propose education to eradicate these diseases was Solomon, and he began five thousand years ago, and with education, such as he gave, and such as they proposed to give, these diseases had increased and multiplied. Until they put aside that prudery which now prevented them from attacking this problem correctly, and which prevented them from teaching the child about his sexual nature and procreation, they could make no progress. Let them begin with the child.

#### REMARKS BY COLONEL ROOSEVELT.

Col. Theodore Roosevelt, who was unable to address the Association at the Auditorium, as expected, went out to Whitefish Bay in an automobile and addressed the Association there. He said he regretted very much that he was unable to meet them that morning. He could not do so, for the reason that the schedule mapped out for him was three times as much as he could do.

Like any other man in public affairs, he was awake to the needs of the public health. It was necessary to join their efforts for the preservation of the public health. It was important not only to keep the health of the individual, but also to keep the health of the nation.

Yellow fever was a distinctive national problem. Several nationalities in the western hemisphere had dealt with it and must deal with it effectively to prevent the ravages of this scourge.

The question of dealing with the public health was a matter of the last two generations. One half a century ago comparatively nothing was known of diseases which were a scourge to the human race. About six

hundred years ago the black death desolated Europe, a disease which undoubtedly they could deal with now. Then it took off two thirds of the population of Europe.

He had just come from a trip to the middle of Africa, where disease ravaged mankind as it did their ancestors. He passed through regions where the sleeping sickness had to its credit over 200,000 deaths in one neighborhood.

The advances made in the medical profession during the last half century were incalculable. The work of the Isthmus of Panama could not have been done in its present shape a decade ago. They could not have grappled with disease as now.

The prime requisite in every nation was to have every man and woman an effective unit. They were dealing with the basic problem of citizenship. Men could not be good unless they were healthy.

He welcomed the delegates to this convention who came from foreign countries, especially from the Americas. In the two Americas they were solving the problem of living peacefully together. Their only rivalry, far different from Europe, was the endeavor to see which was best able to cope with the problems that confronted them all. He welcomed them as their rivals, who were doing all in their power to uplift and care for the physical well-being of the human race. [*Applause.*]

EXECUTIVE METHODS IN PREVENTIVE MEDICINE.

DR. HENRY B. HEMENWAY, of Evanston, Ill., stated health administration was formerly local in nature. The science of public health had now advanced far beyond administration, especially in this country. The American law required a separation of the three branches of government. Health administrators, being of the executive branch, had no legislative power. They might not, however, issue any orders or regulations except as distinctly provided in the laws under which they were acting. All health authority was derived from the police power of the state. Police power was a system of precaution for the prevention of crimes and calamities. It was a necessary but also a dangerous power; and because of the danger to individual liberty, the courts were inclined to scrutinize its operations closely to prevent abuse. The police of public health started from the idea of nuisance, and presupposed legislative determination in great detail.

Even though administered by municipal officers, public health work was essentially state in nature; and in the absence of special constitutional provisions to the contrary, the state had the right to appoint and regulate the acts of municipal health officers. The protection of the state against damage suits was extended to all health officials, so long as they acted within the law, even though error had been committed, and damage resulted to individuals. As compared with other countries, American state executives were ill-organized and weak, and one of the weaknesses was shown in the tendency to the appointment of boards, often serving without pay. Since executives had no legislative power, an executive board lacked in responsibility, decision, activity and despatch, without compensatory advantage. There was no more reason why a physician should donate his public health service than that a lawyer should serve without pay as a judge, or a banker should give the use of the money needed for public improvements. Health laws should be enacted by the state legislature. The entire health administration of a state should be recognised as one body, having a single head to whom all local and district officials were responsible. Every man should be held responsible for a definite portion of the work.

Executive duties were either ministerial or discretionary. If ministerial, the officer might only do that which was required. If discretionary, he might do anything within that discretion; but neither his acts nor legislation for his guidance might be arbitrary or unreasonable. If the officer acted beyond the provision of the law, he might be sued as a private wrongdoer. Health legislation should be definite, not in general terms, to best safeguard individual liberty.

Matters of technical detail in the work of the office might be largely left to subordinates, but the executive must personally and frequently decide upon questions of administration. Such knowledge of administrative law as would give confidence in execution, celerity of decision and definiteness of effort would increase effectiveness. In other words, the head of the department should be a professional administrator with a broad knowledge of sanitary science, not merely a sanitarian or a party politician. At least once a year there should be a conference of state and district officers, at which proposed legislation might be discussed and prepared for presentation to the legislature for enactment.

DR. C. A. HARPER, of Madison, Wis., discussed the relation between state and municipal boards of health, saying the interchange of ideas, and the knowledge required by each health officer in knowing how other health officers did their work and met certain emergencies, fully justified the labor and expense incident to holding state or district conferences. If the health officer expected to impart knowledge to others, he must know his subject thoroughly and realize the important rôle which sanitation and public hygiene play in the prevention of diseases.

PROF. E. H. BAILEY, of North Dakota, spoke of the advantages of co-operation between the state board of health and state universities.

DR. GUSTAV F. RUEDIGER, of Grand Forks, No. Dak., spoke of the relation of the state university of North Dakota to the state board of health, and favored placing the state board of health laboratory under the control and regulation of the state university, under the direction of the professor of bacteriology and pathology.

DR. CHARLES A. HODGETTS, of Ottawa, Canada, pointed out the functions of the Canadian Commission of Conservation and Public Health.

DR. H. W. HILL, of Minneapolis, Minn., spoke of the relations of universities to public health work.

MAYOR SEIDEL, of Milwaukee, Wis., discussed social economics and public health. He said that land had a value. Timber had a value, and so had water and mineral deposits. These, with machinery, were important factors in wealth production. But the most important factor of all in wealth production was human labor. Without labor of hand and labor of brain applied to raw material, there was no civilization thinkable. The greatest of all natural resources was human life, with its accompaniment of labor. It was good and excellent work to conserve land and timber and water utilities, but it was far more important, and far more fundamental, to conserve human life and make it more efficient and give it added ability and power to create.

MR. FREDERICK ALMY, of Buffalo, N. Y., spoke of the inter-relation of national organizations working in the interest of health.

DR. FREDERICK MONTIZAMBERT, Director-General of Public Health, Canada, said the administration of the subject of public health in that country was joint between the Dominion and the Provinces. The administration of the subject of quarantine pertained solely to the Dominion government, including the

inspection and treatment of passengers, crews and vessels from abroad arriving at the different seaports on the Atlantic and Pacific coasts, and of the persons and trains entering Canada over the international frontier. Leprosy was dealt with by the federal government. The adulteration of foods and drugs was dealt with by the Department of Inland Revenue. Infectious and other diseases occurring within the Dominion were under the administration of the provincial and municipal authorities.

YELLOW FEVER HAD DISAPPEARED FROM THE MEXICAN REPUBLIC.

Dr. E. Liceaga, of Mexico City, contributed a paper in which he stated that from the twentieth of December of last year not a single case of yellow fever had been observed either there or in any other part of the Mexican Republic. In spite of the success obtained, the sanitary service continued its action with the same regularity as in previous years, although it was not directing its energies especially against malaria.

QUARANTINE OR ISOLATION IN DIPHTHERIA.

Dr. James Roberts, of Hamilton, Ontario, stated in this paper he first established the fact of the dominance of the personal contact factor in the spread of this disease. Defective drains, bad ventilation, etc., although prejudicial to health, cannot cause diphtheria, which was due to the presence of certain bacteria. Overcrowding assisted the spread of diphtheria. Forty-five per cent of his cases, representing not more than one quarter of the school population, came from the districts where the industrial classes were centered. The presence of an ignorant foreign element hindered the work of sanitation and favored the spread of disease. Diphtheria, owing to the manner by which it was spread, was a school disease. The Boston Board of Health, after an exhaustive investigation, concluded that it would be impracticable to isolate bacillus carriers who did not themselves suffer from the disease, as they constituted 1% of all healthy school children, and these germs were ordinarily of little virulence. The restriction of this disease was for practical purposes limited to isolation of clinical cases and control of the contacts in connection with these. Where isolation could not be strictly carried out at home, hospitalization was the best method. But isolation hospitals were very unpopular, owing to their usually poor equipment, the danger of cross infection, etc. They safeguarded the community, but often at the expense of the individual. Our present-day conception of diphtheria as pre-eminently a school disease made it imperative that the inspection of school children should be thorough enough for the detection of early cases, and of those children harboring virulent bacilli. When this had been accomplished, regulations intelligently enforced, providing for the proper isolation of all cases either at home or in suitable institutions, would be productive of better results and much less annoyance and hardship than the continued enforcement of antiquated laws and regulations incompatible with their present knowledge of diphtheria.

A STUDY OF THE VENTILATION OF SLEEPING CARS.

Dr. T. R. Crowder, of Chicago, Ill., stated the only available method of accurately estimating the air supply of running cars was by determining the amount of carbonic acid gas which their atmosphere contained, and from this computing the amount of air which entered. The problem was mathematically simple, and rested upon the known amount of carbonic acid thrown off by the respiration.

This method had been applied in the study of sleeping car ventilation. Some 2,000 samples of air had been analyzed from these cars. It showed that an average of approximately 40,000 cubic feet of air was supplied hourly to the main sleeping compartment of standard cars, which were equipped with the ventilating system now in common use by the Pullman Company, and that the amount was rarely, if ever, under 20,000 cubic feet. There were rarely more than twenty people in a sleeping car; hence each person was supplied with some 2,000 cubic feet of air each hour. This applied to the findings in occupied berths, both lower and upper, as well as to the car in which the berths were not made up.

The high wind pressure to which running railway cars were subjected resulted in fair ventilation even when they had no special ventilating devices. The amount of air which they received would vary from 15,000 to 50,000 cubic feet per hour, depending upon various conditions.

When cars were uncomfortable and felt "stuffy," the fault was not generally to be laid to an inefficient air supply, as was commonly supposed. It rarely happened that the air supply was so inadequate to bring about this condition, though it might at times contribute to it. The fault generally lay chiefly in an improper control and regulation of the heat supply. The degree of humidity of the atmosphere was also a very important factor; but its control was difficult, and often impossible. In the opinion of the author, heat control was a more important problem in maintaining comfort in sleeping cars than was the furnishing of a great air supply, and relatively greater attention should be concentrated upon this element of the problem and maintaining a hygienic atmosphere in cars.

Dr. John A. Amyot, of Toronto, Canada, discussed the laboratory in its relation to public health, while Dr. William A. Evans, of Chicago, spoke of efficiency and economy in municipal health work.

The Association endorsed the principles embodied in the Senator Owen Bill for the establishment of a National Department of Health.

A resolution was adopted recommending that a committee be appointed to consider and report next year a scheme (of which Dr. Probst shall be chairman) for instruction in hygiene and sanitation, in high schools, and in colleges and universities, with the view to bringing the necessity for such instruction, with definite recommendations, to the attention of educational authorities.

A new section to be known as the "Section on Sociology" was formed; also one to be known as the "Section on Sanitary Engineering."

The following resolution was adopted:

*Whereas*, A considerable number of municipal health officers believe terminal disinfection at the conclusion of communicable diseases is of questionable value and extravagant in practise; and

*Whereas*, A few municipal health officers of sound judgment and highest attainment have abandoned this practise as a prophylactic measure; therefore, be it

*Resolved*, That the Municipal Health Officers Section refer to the Executive Committee a recommendation that the American Public Health Association appoint a committee to study the end results and practise in communities where terminal disinfection is no longer practised at the conclusion of cases of communicable disease.

The following resolutions were likewise adopted.

*Resolved*, That this Association appoint a committee to co-operate with the Census Bureau in establishing standard methods of accounting for municipal sanitation.

*Resolved*, That this Association offers and accords

its hearty approval and commendation of the educational work carried on by the *Ladies' Home Journal* regarding the necessity and ways of teaching children the truth about reproduction and the sexual life.

OFFICERS ELECTED.

The following officers were elected: President, Dr. Robert M. Simpson, Winnipeg, Manitoba; First Vice-President, Dr. Fernando Lopez, Mexico City; Second Vice-President, Dr. John F. Anderson, Washington, D. C.; Third Vice-President, Dr. B. A. Bading, Milwaukee, Wis.; Secretary, Dr. William C. Woodward, Washington, D. C.; Treasurer, Dr. Frank W. Wright, New Haven, Conn.

Laboratory Section: Chairman, Dr. J. F. Amyot, Toronto, Canada; Vice-Chairman, Dr. John F. Anderson, Washington, D. C.; Secretary, Mr. B. R. Rickards, Columbus, Ohio; Recorder, Dr. H. D. Pease, New York City.

Vital Statistics Section: Dr. Wilmer R. Batt, Harrisburg, Pa.; Vice-Chairman, Dr. C. V. Chapin, Providence, R. I.; Secretary, Dr. F. L. Watkins, Columbus, Ohio.

Municipal Health Officers Section: Chairman, Dr. A. J. Douglass, Winnipeg, Manitoba; Vice-Chairman, Dr. Frederic Torralbas, Havana, Cuba; Secretary, Dr. E. C. Levy, Richmond, Va.

Havana, Cuba, was selected as the place for holding the next annual meeting.

## Book Reviews.

*State Board Examination Questions and Answers of Forty-one States and Two Canadian Provinces.* A practical work, giving authentic questions and authoritative answers that will prove helpful in passing state board examinations. Reprinted from the *Medical Record*. Third edition, revised and greatly enlarged. New York: William Wood & Co. 1910.

This new edition marks the third year of a well-known publication, which is sufficiently described by its title-page. It should prove a useful manual of review for new candidates for examination, and for practitioners obliged to be re-examined on removing to another state than that in which they were originally qualified.

*Movable Kidney.* Its Etiology, Pathology, Diagnosis, Symptoms and Treatment. By WILLIAM WELLINGTON, M.S. (Lond.), F.R.C.S. With 12 full-page plates and illustrations in the text. London, New York, Toronto and Melbourne: Cassell & Co., Ltd. 1910.

This excellent monograph presents the results of the author's personal experience with several hundred cases in which the diagnosis of movable kidney was made, in 230 of which he performed nephropexy on 350 kidneys. His results, so far as relief of symptoms is concerned, seem to have been admirable. He describes these symptoms under the headings of pain, and disorders of the alimentary, genito-urinary, and nervous systems. He also describes the technic of his own operative procedure. Though movable kidney should not be hailed as a cause of all obscure somatic disorders, and though its diagnosis should never be allowed to pass without rigid scrutiny and criticism, it is doubtless a definite pathologic condition, whose operative relief, as the author states, is precisely analogous to the radical cure of hernia. This volume states the observations and opinion of an expert in its study.

*Epidemic Poliomyelitis.* Report of the Collective Investigation Committee on the New York Epidemic of 1907. Octavo. Pp. iv, 119. With 14 plates. Nervous and Mental Disease Monograph Series No. 6. New York: The Journal of Nervous and Mental Disease Publishing Company. 1910.

This investigation was undertaken by committees appointed by the New York Neurological Society and the Pediatric Section of the Academy of Medicine, with the co-operation of Dr. Flexner, of the Rockefeller Institute; Dr. Bolduan, of the Department of Health of the City of New York, and Dr. Taylor as a representative of orthopædic surgery, and under the chairmanship of Dr. Sachs. Various subcommittees were appointed to study the epidemiology, the prodromal symptoms and the symptoms of the period of onset, the symptomatology and cause of the disease, the pathology and pathological anatomy, and the treatment. The committee estimated that the epidemic of 1907 in New York embraced about 2,500 cases, and they obtained positive knowledge of about 800 and a careful analysis of 752. The present volume, which presents the result of their labors, is the most important contribution to the study of poliomyelitis that has yet appeared, not only from the fact that it deals with the greatest epidemic occurrence of the disease yet known, but also because it presents the results of Flexner's studies of the communicability of the disease to monkeys by inoculation of the spinal cord from a case of poliomyelitis. The committee have established the fact that the disease is infectious, the symptoms of infection being sometimes as prominent as those of paralysis; that it may involve the lower part of the brain axis as well as the spinal cord, and that meningeal symptoms are usually common in the early stages of the disease; that it is more fatal than was supposed, and yet that recoveries are more common than was suspected. They believe that, although variations occur in the clinical type of the disease, there is no good reason for adopting Wickmann's suggestion of calling it Heine-Medin's disease, and they found that Strümpell's cortical polio-encephalitis was not observed in the epidemic. The committee certainly deserve the gratitude of the profession for their admirable work, which must remain an essential contribution for any further study of poliomyelitis, and a model for all future investigators.

THE BOSTON

# Medical and Surgical Journal.

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## IDEALS IN SEX EDUCATION.

Of all the problems that vex our questioning, self-responsible age, none is more perplexing, more profound, more protean, than that arising from the fact of sex. Indeed, it is not a single or even hydra-headed problem. As the instinct of sex is the most pervasive and imperious in human life, so its manifestations appear in every aspect of conduct and in all the possible relations of existence. There is no wonder, then, that from it have proceeded the greatest blessings and the greatest curses of mankind and that, sphinx-like, it still propounds the seemingly inscrutable riddle of the ages.

In earlier times, almost until the present day, it has been the policy of humanity to treat the darker aspects of this riddle by disregarding them, and it must be admitted that for the time there was something wholesome in this attitude. That time, however, seems now to be past, and one by one, for better or for worse, the problems involved in the relations of the sexes are being brought into the light for study and consideration. Probably it is well that this should be so, for the evils concerned lie at the root of civilized progress. The temptation is strong to leave their eradication to natural process, or, in Mr. Dooley's classic phrase, "turn the job over to destiny." But publicity is the watchword of the hour, and doubtless the free exposure of wrong is the first step towards its correction.

To many persons, perhaps to physicians especially, the grosser aspects of the problem present themselves most forcibly. The control, cure and prevention of venereal infections are tangible desiderata that are now frankly discussed and actively attempted. Yet though these be highly worthy of attainment, they concern objects which are after all superficial. Prostitution itself is but a symptom, not the real disease. To strike at the pathologic process one must influence the springs of human action, and the agent by which this may be done is not publicity, but education; and education should mean not merely preaching to adults, but teaching children by influence, suggestion and example.

That childhood is the time when the beginnings of evil may most easily be encouraged or suppressed has long been recognized. Unfortunately, the problem of teaching wisely to the young the facts and ideals of sex is so delicate, so subtle, that many shrink from attempting it, and those who are bolder seem often to have hastened the evils they sought to avert. At present the trend of policy seems rather towards an over-emphasis on the negative side of the proposition, a tendency to exaggerate the dangers and horrible consequences of sexual errors rather than to depict the inspiring nobility and blessings of the relations between men and women. Such measures fall as far short of the mark as bogie stories told to frighten children into obedience.

In an article on "Sex and Education," in the current number of the *Educational Review*, Mr. William D. Parkinson, superintendent of schools at Waltham, Mass., points out some of the inadequacies of such purely deterrent methods and suggests the sane and more hopeful methods of positive education in right attitudes and ideals. "To depict in startling colors the awful consequences of vice and to dwell upon its equally appalling prevalence," he writes, "have never been found effective in advancing standards of virtue." Nor is the inspiration of ideals into the receptive mind of puberty so difficult as might appear. Who cannot recall from his own experience chance suggestions that have been seized, perhaps subconsciously, and elaborated into motives of conduct and determining factors in life? There is considerable and credible evidence that good seed given the start has a certain tendency to grow and choke out the weeds that later are sure to spring up. To sow such seed should be the function of education, even more than to forebode the coming of the tares.

Doubtless the solution of the problems of sex might be left with some remote security to evolution, to "the long, hard grinding of the ages," to use Mr. Parkinson's expressive phrase. But, as Dean Briggs has said, the trouble with leaving the young to flounder is that so many perish pitifully in the process. We cannot afford to be too "careless of the single life." The fact seems

to be that sex is itself the most potent agent of evolution. Mere reproduction is not its object, because nature attains that end more successfully in other ways. The biologic reason for sex is to secure variation, which has resulted in the highest evolutionary processes of life. And based on sex, or rather appearing as its spiritual correlate or counterpart, are the intellectual and emotional functions which are the greatest glory of humanity. To physicians, prone, even compelled, to deal chiefly with the physical aspects of mankind, the possible exaltations and perversions of these functions are sometimes revealed as to no one else, and to them the suggestions of such a discussion as Mr. Parkinson's should bring reminders of the power which their position gives to their speech and example, and of the duty which they should share with the educator in teaching to the young and to adults ideals which their peculiar experience has to them most clearly revealed.

## THE MIGRATION OF HOSPITALS.

As a consequence of the growth of our larger cities, it is inevitable that many institutions should find their original locations unsuitable for their best work. In New York, for example, the march uptown of the churches has been noticeable during the past decade, a tendency at which a certain degree of criticism has been leveled, with what justice it is not our present purpose to decide. In the matter of hospitals, however, it is evident that light and space are both desirable, if not essential, for the proper care of the sick, and that neither of these is to be obtained in the crowded portions of a large city. St. Luke's Hospital moved to Morningside Heights some years ago; Roosevelt is about to follow, though not going so far, and now the New York Hospital, one of the most venerable of the city's institutions is planning a similar move.

It is announced that this hospital is to give up its present buildings on Fifteenth and Sixteenth streets, west of Fifth Avenue, and remove to a site, already purchased, on the bank of the Hudson River between Fifty-fourth and Fifty-fifth streets. There it is purposed to erect one of the finest hospitals in the world, the estimated cost of which, including land, buildings and equipment, will amount to more than $3,000,000. In the present buildings, in a closely built-up neighborhood, the supply of light and fresh air is more or less inadequate, and in deciding upon the new location the Society of the New York Hospital had in mind that congestion of population will never seriously affect the institution. To the south is the large DeWitt Clinton Park, on the west is the Hudson River, and eastward ample space will be afforded by the extent of the hospital grounds. It has excited some comment that a site should have been selected so near the Roosevelt Hospital, which is at Fifty-eighth Street, and only a short distance from the Hudson. The New York Hospital is much the oldest institution of its kind in the city, having been chartered in 1771 by King George III. The original site of the hospital consisted of five acres on what is now lower Broadway, and the foundations for the first building were laid in July, 1773. Before this was completed, however, it was almost destroyed by fire, and during the Revolutionary War the unfinished structure was used as a barracks by the British and Hessian soldiers. It was not until 1791 that the hospital was ready for the reception of patients. The institution was operated continuously until 1869, when, on account of lack of funds, its work had to be temporarily suspended; but later, through the income derived from leased lands, sufficient funds were secured to erect and maintain the present hospital buildings. Among the governors of the hospital in the past appear the names of John Adams, Aaron Burr, Thomas Buchanan, John Jay, James Duane, Frederick de Peyster, Cornelius Dubois, Augustus Van Courtlandt and many others well known in the history of New York. The branches of the hospital include the House of Relief, an emergency hospital on Hudson Street, New York, and the Convalescent Cottages and large Bloomingdale Hospital for the Insane at White Plains, Westchester County.

## PROPOSED MILK LEGISLATION IN MASSACHUSETTS.

BEFORE the Massachusetts State Senate last week a bill was introduced providing for the incorporation, in various communities, of medical milk commissions, which shall have authoritative general supervision of the milk supply in their respective districts, subject to the provisions of the State Board of Health. Some of the details of this proposed measure seem of sufficient importance to deserve quotation. It provides that:

"For the purpose of supervising the production of milk intended for sick-room purposes, infant feeding, for use in hospitals and for other uses, any five or more physicians authorized to practise medicine in this state may form a corporation subject to the provisions of chapter 125, Revised Laws. Members of the board of health in the city or town in which such corporation is formed

are to be members thereof *ex-officio*. Such corporation shall be known as the 'Medical Milk Commission' of such city or town.

"No member of such corporation formed under this act shall receive any salary or compensation for his services on such commission, nor any emolument or compensation from any dairy man or men producing milk under agreement with such corporation of any kind or character under penalty of a fine of $100 for each offense, to be recovered, as in any action for debt, by the corporation of which he is a member.

"The corporation so formed shall enter into agreements with dairymen for the production of milk under supervision of the Commission, and it shall prescribe conditions under which such milk shall be produced, the standards of purity and quality for certified milk as fixed by the American Medical Milk Commission and the standards for milk now or hereafter fixed by the laws of Massachusetts. The working methods of any corporation organized under this act and the dairies in which milk is produced under this contract shall at all times be subject to the scrutiny of the State Board of Health.

"No person, firm, association or corporation shall sell, exchange, offer or expose for sale or exchange as 'certified milk' any milk which does not conform to the regulations of the Commission formed under this act and which does not bear the certificate of a corporation organized under its provisions under penalty of a fine not exceeding $100 for each offense."

The intent of these provisions seems unquestionably good. It remains for adequate discussion and consideration to determine the practicability of such a system and the possibility of administering it without conflicts of authority and responsibility.

## MUNICIPAL HOSPITAL IN CAMBRIDGE.

A MOVEMENT has recently been set on foot in Cambridge, Mass., to secure funds for the establishment and maintenance in that city of more adequate hospital accommodations for the poor. A committee of twenty Cambridge physicians, organized to investigate and report on the need for such provision, issued last week the following circular letter, addressed to the citizens, embodying certain conclusions and recommendations:

"Though in some respects Cambridge is one of the leading cities in the Commonwealth, she has little reason to be proud of her record in caring for that unfortunate class which naturally appeals to the sympathies of every community — the sick poor. Aside from a few beds at the city almshouse, the only hospital accommodations in Cambridge for the care of patients suffering from acute medical and surgical diseases are provided by the Cambridge Hospital, which has but thirty-five beds for non-contagious cases. While this institution, equipped and supported by private funds, and the scanty fees paid by the less needy among its patients, is giving excellent service, it is manifestly incapable of coping with the needs of a city with a population of 104,000, a large proportion of whom are employed in shops and manufactories and are scarcely able to earn for themselves and their families more than sufficient to secure the bare necessities of life. No other municipality in Massachusetts of equal population is so poorly equipped with hospital facilities as Cambridge.

"Worcester, with a population of 145,986, has four hospitals, with 305 beds; Lowell, with 106,294, has two hospitals and 189 beds; Cambridge, 104,938, has one hospital and 35 beds; Springfield, 88,926, has four hospitals and 351 beds; Pittsfield, with only 32,121, has two hospitals and 157 beds; Salem, 43,697, has one hospital and 102 beds; Newton (also a suburb of Boston), 39,806, has one hospital and 115 beds; Fall River, 119,295, has two hospitals and 190 beds, and Waltham (another suburb of Boston), with one fourth the population of Cambridge, has two hospitals and 90 beds. In both Newton and Waltham these hospital facilities do not include their well-equipped contagious hospital, with a capacity of about 50 beds. The town of Arlington, with 11,187 people, has a hospital recently completed, with a capacity of 35 beds, the same as Cambridge, with a population about ten times as great.

"At this time the erection of a municipal hospital is being urged for economic reasons. The city is obliged to maintain a municipal and contagious hospital and has already appropriated the money for this purpose. By combining a municipal and contagious hospital under one administration, the city can save $10,000 yearly, thus in fifteen years saving the initial cost of a municipal plant. Moreover, the interest and sinking fund charges on a loan sufficient to build and equip a hospital of fifty beds would not exceed the annual amount now paid by the city to other municipal corporations for the care of the sick poor. The problem of a municipal hospital in a city with as large a population as Cambridge is inevitable. It must be met and solved in the proper manner. There is no more reason that Cambridge should neglect her sick than that she should neglect her parks or her schools."

It is admittedly the duty of every community to provide for the care of its medical dependents, that they may not become a burden on charitable institutions elsewhere. It is to be hoped that ways and means for such municipal provision may be satisfactorily found in Cambridge.

## PROJECTED ENDOWMENT FOR HARVARD DENTAL SCHOOL.

IT is announced that a movement has been instituted to secure for the Harvard Dental School an endowment fund of $500,000, to make possible

not only the continuance of its present educational work, but the extension of that work by the establishment of free clinics for poor schoolchildren, and the instruction of the public in the importance and necessity of dental and oral hygiene. For the purpose of obtaining this fund, a series of associated committees has been formed under the general chairmanship of Dr. Eugene H. Smith, dean of the Dental School. The organization of these committees is as follows:

From the administrative board: Dean Smith, Drs. Charles A. Brackett, Edward C. Briggs, William H. Potter, Harold DeW. Cross, Amos I. Hadley, Waldo E. Boardman, William P. Cooke.

Alumni Association: Drs. Harvey W: Hardy, F. T. Taylor, James A. Riley.

Harvard Odontological Society: Drs. Lyman F. Bigelow, Harry S. Parsons, A. H. St. C. Chase, James Shephard.

Dental School: Drs. John W. Estabrooks, Robert Whitehall, H. S. Parsons, E. B. Wyman.

Research Committee: Drs. Lawrence W. Baker, LeRoy M. S. Miner, H. C. Smith, George H. Wright.

Other graduates: Drs. Howard A. Clapp, Arthur H. Stoddard, Fred A. Robbins, Robert T. Moffatt, Evan P. Wentworth, D. F. Spinney, W. A. Davis, E. H. Coswell, Horatio E. Andrews, Robert S. Catheron, H. A. Lane, Reinbold Reulburg, Morris Peters.

The secure perpetuation of any good work depends on its adequate endowment, and if this can be obtained for the Harvard Dental School, its future should be as brilliant as its past has been distinguished and progressive.

## MEDICAL NOTES.

DEATH OF THE EMIR OF BOKHARA. — It is reported from St. Petersburg that on Jan. 5 Sayid Abdul Ahad, the Emir of Bokhara, a Russian subject state in Central Asia, died of bubonic plague.

THE EMPEROR WILLIAM RESEARCH FOUNDATION. — Report from Berlin describes the formal inauguration on Jan. 11 of the Emperor William Scientific Research Foundation, with funds equivalent to $2,500,000, the income of which will be used for the maintenance of two institutes for research in chemistry, as annexes to the University of Berlin.

INFECTION WITH DIPHTHERIA BY KISSING. — Report from Pittsburg describes the death from diphtheria, at Newcastle, Pa., of a woman supposed to have acquired the infection by kissing her brother as he was dying of the same disease. This fatality, which might probably have been avoided by the judicious use of an immunizing dose of antitoxin after exposure, serves to emphasize one of the many risks of indiscreet osculation.

A NEW SANATORIUM IN YORKSHIRE. — It is reported that the County Council of the West Riding of Yorkshire, England, has recently drawn up plans for the erection near Bradford of a new sanatorium for consumptives to accommodate fifty patients in permanent wards and fifty in temporary pavilions. The cost of maintenance of this institution is estimated at about six dollars a week for each inmate. Its work is to be extended by the establishment of a summer camp in connection with it.

A LAMENTABLE EXHIBITION OF RACE PREJUDICE. — It is reported that over a hundred white medical students at Georgetown and George Washington universities have refused to attend the lectures of one of their instructors because at a recent exercise of the class several negro students from Howard University were present. Such instances of race prejudice are unfortunate and unworthy in individuals of the supposed enlightenment of medical students.

FALSE STATEMENTS ON PATENT MEDICINE LABELS. — A case is now pending before the United States Supreme Court involving the decision "whether false statements on the label of a patent medicine as to its alleged curative properties constitute a misbranding punishable under the pure food and drug act," provided that the contents of the medicine be truthfully stated. The United States District Court for Western Missouri had recently decided, in the case of a "cancer cure," that such statements do not constitute misbranding. The reversal of this decision is sincerely to be desired, since whatever the legal technicalities, the intent of the law to protect the public seems obvious.

TWO NEW ITALIAN COMMISSIONS. — Report from Florence states that the Italian government has recently appointed two new royal commissions, the first of eight members, under the chairmanship of Dr. Alessandro Lustig, of Florence, to study the cause and transmission of pellagra, in the light of the views recently advanced in regard to it by Dr. Sambon; the second, of seven members, with Dr. Guido Bacelli, president of the sanitary council of Rome, as chairman, to investigate and report on the value of the shore

treatment of tuberculosis, with a view to the possible advisability of establishing and maintaining marine hospitals for patients with this disease.

Price and Supply of Radium. — It is reported from Paris that during the year 1910 1.92 gm. of radium were produced at Nogent-sur Marne, and sold for the equivalent of $153,600. The present market price of this valuable substance seems to range from $80,000 to $83,330 a gram, though it is stated that Sir Ernest Cassel recently secured a gram for the English Radium Institute for £15,000, the reduction being made "in consideration of the large amount purchased." It is said that the pitchblende mines at Joachimsthal, Austria, promise to afford a rich supply of radium, and the imperial Austrian government has recently placed them under control of the minister of public works, who is empowered to fix the price of all radium extracted therefrom.

Bubonic Plague in Asia. — Reports from all quarters indicate that the prevailing epidemic of bubonic plague is rapidly extending its ravages in northeastern Asia. Harbin, in Manchuria, appears to be the center of infection, and it is said that 600 deaths of the disease occurred there during the first fortnight in January. At Mukden there have been 30 deaths, and report from Blagovieshtchensk, Russia, states that in the province of Fudziadian there is an average of 80 deaths daily. The disease is also prevalent at Kirin, Kwanchongtse, Chang Chuen and Darien. The bodies of those who perish are thrown by the natives into the Amur River to carry the infection down its course. The Chinese and Japanese governments are, however, adopting measures to check the southward spread of the epidemic. A five days' quarantine has been established for all persons seeking to pass the Great Wall, and observation camps are to be instituted at Harbin, Mukden and Shanhikwan.

### BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Jan. 17, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 46, scarlatina 44, typhoid fever 2, measles 51, smallpox 0, tuberculosis 71.

The death-rate of the reported deaths for the week ending Jan. 17, 1911, was 15.90.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, Jan. 14, 1911, was 222, against 237 the corresponding week of last year, showing a decrease of 15 deaths, and making the death-rate for the week, 16.80. Of this number 119 were males and 103 were females; 217 were white and 5 colored; 116 were born in the United States, 99 in foreign countries and 7 unknown; 42 were of American parentage, 146 of foreign parentage and 34 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 52 cases and 2 deaths; scarlatina, 41 cases and 0 deaths; typhoid fever, 5 cases and 1 death; measles, 41 cases and 1 death; tuberculosis, 98 cases and 24 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 28, whooping cough 1, heart disease 31, bronchitis 9. There were 13 deaths from violent causes. The number of children who died under one year was 25; the number under five years, 34. The number of persons who died over sixty years of age was 77. The deaths in public institutions were 85.

Conviction of an Illegal Cocaine Dealer. — Last week another illegal dealer in cocaine was trapped and arrested in Boston, and later sentenced by the district court to six months' imprisonment.

Fine for Violation of Pure Food Law. — At Malden, Mass., last week, a provision dealer of that city was convicted by the local court and fined $25 for violation of the pure food law in selling mixed pickles containing alum without noting that element of their content in the label on the packages in which they were dispensed.

Recent Seizures of Frozen Eggs. — On Jan. 12, ten cases of frozen eggs, each case containing two ten-pound cans, were seized by the United States deputy marshal at Boston as containing decomposed animal matter. The eggs, which were shipped from a firm in Chicago, were intended for use by bakers.

Report from Hartford, Conn., states that the United States circuit court has recently returned a verdict in favor of the government in a case in which conviction was asked for the shipment of 3,000 lb. of frozen eggs.

Work of Women's Municipal League. — At a meeting of the Women's Municipal League, held in Boston last week, the opening address was made by Dr. Richard C. Cabot in regard to the work done by the League in the care and education of women during pregnancy. During the

past year six hundred and twenty such patients were visited and instructed by the nurse provided through the agency of the League. Other addresses on the details and value of this work were made by Dr. Franklin W. Bock, of Rochester, N. Y., and by Dr. Robert L. DeNormandie, of Boston.

DUTY OF PHYSICIANS IN SEX EDUCATION. — At the annual meeting of the Unitarian Club of Boston, held last week, addresses were made on the subject of "Sex Education and the Family" by Dr. Frederick H. Gerrish, of Portland, Me., and by Dr. Prince A. Morrow, of New York, president of the American Federation for Sex Hygiene. Both speakers emphasized the responsibility of physicians in such matters and lamented their frequent apparent indifference on the subject. It should be added, however, that much yet remains to be done in defining more accurately the respective functions of physicians, parents and school teachers in such education.

FINE FOR FAILURE TO REPORT OPHTHALMIA NEONATORUM. — In the issue of the JOURNAL for Jan. 5 we reported the fining of a Boston physician for failure to notify the board of health of a case of ophthalmia neonatorum. Last week, before the East Boston Court, another physician of that district was fined $50 for the same offense of omission. Prosecution and conviction in such instances are the only means by which professional neglect can be checked and the enforcement of wise sanitary provisions insured.

SHORT-MEASURE MILK JARS. — Among other recommendations in the recently submitted annual report of the Massachusetts State Commission of Weights and Measures is one for the enactment of a law requiring that all receptacles in which milk is sold shall actually hold the amount which they are supposed to contain. The desirability of honest measure in this respect would seem to be self-evident. As a matter of fact, the commissioner has found that "many of the bottles now in use are short measure and result in a loss to the consumer of one-half cent on each bottle purchased." It is discouraging that all forms of honesty apparently need to be made matters of statute.

FOUR CENTENARIANS. — Abner Dunton, who died on Jan. 12, at Lincolnville Center, near Rockland, Me., was said to have been born on Aug. 1, 1807, in Barrettown. He is survived by two sons.

Mrs. Rebecca Gilmore, who died at Camden, N. J., on Jan. 10, was said to have been born on April 5, 1810.

Mrs. Anastasia Carey, alleged to have been one hundred and nine years of age, died on Jan. 10 in Philadelphia.

Samuel Tenover, who declared himself to be one hundred and nine years old, died last week near Danville, Ill. He was irregular in his diet and habits, used alcohol and tobacco and always had excellent health until shortly before his death.

LECTURE ON SYPHILIS. — Dr. Abner Post will repeat the public lecture on Syphilis, given in the Harvard Medical School course, on Sunday evening, Jan. 22, at eight o'clock, in the amphitheater of the Administration Building, Harvard Medical School. The lecture will be open to the medical profession and to nurses.

The repetition is at the request of the committee on public lectures.

COMMITTEE ON PUBLIC HEALTH OF THE SUFFOLK DISTRICT MEDICAL SOCIETY. — In conformity with the vote passed at the meeting of the Society, Oct. 29, 1910, a committee on public health has been appointed by the president. The members of this committee are Drs. E. G. Cutler, H. D. Arnold and L. R. G. Crandon.

It is hoped that this committee will be of very considerable service to the Society, and that it will represent the Society in all matters of medical importance in the city of Boston. Already the committee has shown its possibilities in putting itself on record as favoring the continuance of the School for Tuberculous Children in Franklin Park for one year more, as an experiment. This is merely a sample of the kind of service that the Suffolk District Medical Society, with its membership of nearly eight hundred physicians, can render through this committee in the cause of the public health.

MEETING TO DISCUSS MILK QUESTION. — On Jan. 16 a public meeting was held in Boston, under the auspices of the Boston Co-operative Milk Producers' Company, for the general discussion, by producers, consumers and physicians, of the much-vexed problems of the milk supply. The following was the program of addresses:

11.30 A.M. "Some of the Problems Confronting the New England Farmer," by H. G. Deane, Grafton, N. H.

11.50 A.M. "The Dealer's End of the Business," by I. S. Whiting, Boston.

12.20 P.M. "The Milk Dealer's Obligation to

the Producer and Consumer," by C. H. Hood, Somerville.

1.30 P.M. "Cost of Production," by Prof. J. W. Sanborn, Gilmanton, N. H.

2.10 P.M. "Inspection," by Dr. Richardson, Secretary State Board of Health, Boston.

2.35 P.M. "The Value of Milk as a Food Product," by Prof. S. W. Washburn, Agricultural Experiment Station, Burlington, Vt.

3.30 P.M. "Transportation," by W. A. Graustein, Cambridge.

### NEW YORK.

FUND TO PROMOTE RESEARCH. — By the will of Dr. Albert Seessel, of New York, who died on Dec. 24, his residuary estate is left for the establishment at Yale University and at the Koenigslich Sachische University at Leipsic of a fund to promote original research, to be called, in honor of his mother, the Theresa Seessel Fund. Among other bequests in the will are $1,000 each to St. Mark's Hospital and the German Medical Society of New York.

NEW YORK STATE HOSPITAL FOR THE CARE OF CRIPPLED AND DEFORMED CHILDREN. — At the regular meeting of the Board of Managers of the New York State Hospital for the Care of Crippled and Deformed Children, at West Haverstraw, N. Y., held Jan. 10, 1911, Dr. John Joseph Nutt was appointed as surgeon in chief to the hospital *vice* Dr. Newton M. Shaffer resigned. It is Dr. Shaffer's intention to devote himself to the future development of the hospital, as the chairman of the executive committee of the board of managers.

EXTENT OF CHARITABLE RELIEF. — The subcommittee on charities of the Commission on Congestion of Population has just made an elaborate report in which it states that at least one in every nine of the population of New York is the recipient of some form of charitable relief. In speaking of medical charity it says: "There are about 135,000 people constantly sick in New York, about 1 out of every 40, and 389 institutions to provide relief for the sick, with 259 in the congested boroughs. In spite of this careful provision, every year about 27,000 people die of preventable diseases."

COST TO THE STATE OF THE INSANE. — In his first message, sent to the legislature on Jan. 4, Governor Dix, in referring to the cost of caring for the insane, makes the following statement: "In the budget made up for estimated expenditures for this fiscal year the enormous sum of $8,660,281.38 is put down for the state care of the insane, and, while we owe a duty which cannot be questioned and must be strictly lived up to, of caring for those of our people who are thus afflicted, great care should be taken to see that the people are not imposed upon and that wasteful and extravagant habits of expenditure are not permitted to creep into the public affairs of the state. In this connection I would urge upon your attention the necessity for establishing a central department or bureau for the purchase of supplies, not alone for this department, but for all the other branches of the government which need to enter the market from time to time for the purchase of materials of various kinds. The revelations recently made as to conditions at Ward's Island and at some of the asylums for the insane show plainly the necessity for the existence of such reform, and indicate as well the great good that could be accomplished by it." It is also reported from Albany that the governor will shortly recommend that the present State Commission in Lunacy, consisting of three members, shall be abolished and that its powers be vested in a single commissioner.

## Current Literature.

NEW YORK MEDICAL JOURNAL.

DEC. 24, 1910.

1. NOBLE, C. P. *The Law of Degeneracy in Its Relation to Medicine.*
2. FISHER, E. D. *Psychotherapy. Its Uses and Abuses.*
3. BEARDSLEY, E. J. G. *Pulmonary Tuberculosis as Studied in the General Medical Dispensary.*
4. BARDES, A. *Ear Disease and Its Prevention.*
5. ROSEWATER, C. *The Prevention of Abortion.*
6. KOENIG, C. J. *Removal of the Faucial Tonsils followed by Basedow's Disease.*
7. GOLD, J. D. *Liquid Air and Carbonic Acid Snow.*
8. MARSDEN, W. L. *The Dislocated Puerperal Uterus.*
9. KNOTT, J. *Magic and Medicine: A Study in the Borderland of Scientific Light and Darkness.*

DEC. 31, 1910.

1. ROSENBERGER, R. C. *Eggs.*
2. MACRAE, T. *The Wassermann Reaction and "606."*
3. GLASGOW, M. *On the Regulation of Prostitution, with Special References to Paragraph 79 of the Page Bill.*
4. FRANCINE, A. P. *Rest, Exercise and Food in the Management of Tuberculosis.*
5. BYLES, F. G. *Climate as a Curative Agent.*
6. LEROY, B. R. *A New and Successful Therapeutical Use of Old Staphylococci Bacterins.*
7. HUFFMAN, O. V. *Impetigo Contagiosa Transmitted by Machine Oil.*
8. KNOTT, J. *Magic and Medicine: A Study in the Borderland of Scientific Light and Darkness.*

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

JAN. 7, 1911.

1. PETERSON, R. *Indication for and Technic of Vaginal Cæsarean Section in Eclampsia.*
2. *CRAGIN, E. H., AND HULL, E. F. *Treatment of Eclampsia, including a Comparison of the Dangers of Chloroform and Ether in This Condition.*
3. *DAVIS, E. P., AND FOULKROD, C. *Etiology of Eclampsia.*
4. DELEE, J. B. *Surgical Treatment of Eclampsia.*
5. FRY, H. D. *Vaginal Cæsarean Section.*
6. KOEHLER, G., AND DRAKE, C. ST. C. *The Prevention of Infant Mortality.*
7. *HATCHER, R. A., AND BAILEY, H. C. *Cactus Grandiflorus.*
8. CARREL, A., AND BURROWS, M. T. *Artificial Stimulation and Inhibition of the Growth of Normal and Sarcomatous Tissues.*
9. LAMBERT, R. A., AND HANES, F. M. *Growth in Vitro of the Transplantable Sarcoma of Rats and Mice.*
10. RICHARDSON, R. R. *A Case of Gangrene of Appendix and Omentum.*
11. WHITE, D. *Umbilical Hernia. An Unusual Case.*
12. CURTIS, A. H., AND DAVID, V. C. *Transfusion of Blood by New Method allowing Accurate Measurement of the Amount Transfused.*
13. SIMONDS, J. P. *Diphtheria in Relation to Public Health.*
14. *CHACE, A. E. *Pyelitis of Pregnancy.*

2. Cragin and Hull, discussing the treatment of eclampsia, consider that the products of metabolism requiring elimination should be reduced by diet. Elimination of metabolic products should be favored by diuresis and catharsis. High blood pressure should be reduced, not by venesection, but by the use of nitroglycerin or veratrum viride. If the toxemia of the patient, as shown by the urine, blood pressure and general condition does not markedly improve under the preceding principles of treatment, or if an eclamptic seizure occurs, the uterus should be emptied. In all methods of treatment care should be taken not to lower the patient's resistance or seriously injure any of her organs. In this latter connection animal experimentation has shown that ether as an anesthetic is much safer than chloroform, as it, the former, produces practically no effect on the liver or kidneys as compared with the very marked changes produced in these organs by chloroform.

3. Davis and Foulkrod consider that eclampsia is a distinct disease, with varied manifestations and a definite pathologic picture. There is some relation between the fact that an altered nitrogen ratio is found in the excretions and the fact that the liver is the organ most seriously involved. A study of this progressive nitrogen disturbance may provide a guide as to the point beyond which the liver involvement cannot go and allow regeneration and recovery. While no placental theory has yet been proved, the most plausible theory is that some ferment from the placenta may prove responsible as a primary cause for the condition because of a deficient or deranged action. Any pre-existing permanent pathologic condition may prove an exciting cause and still perhaps act by disturbing placental function.

7. Hatcher and Bailey have been unable to obtain any evidence that the true Mexican cactus grandiflorus possesses any pharmacologic action whatever, but seems to be a singularly inert substance when administered by mouth or by vein. When colossal doses are given by vein they sometimes, but not always, appear to exert an extremely feeble action on the heart, but this action is too slight to determine its exact nature. Even the most colossal doses given by mouth to cats, dogs and frogs produce no perceptible effect. They assume, therefore, that any substance extracted from this cactus would likewise prove inert.

14. Chace, reviewing pyelitis of pregnancy, finds that the right kidney is more often affected; the infections by gonococcus, pyogenic organisms, bacillus coli communis and tuberculous germs are the commonest causes. Premature labor occurred in four of Swift's forty collected cases, and in Opitz's series seven out of sixty infants born died immediately or were stillborn. Treatment is as follows: Absolute rest in bed; fluid, preferably milk, diet; mild catharsis and hexamethylenamin in 0.5 gm. doses every three hours, and posture to relieve the ureter on the affected side. The interruption of pregnancy is seldom indicated. Autogenous vaccines have proved beneficial in certain cases. Irrigation of the bladder is beneficial to relieve symptoms, but cases often do just as well without this. [E. H. R.]

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

DECEMBER, 1910.

1. *ANDERS, J. M. *Pleurisy as a Complication and a Sequel of Lobar Pneumonia; Its Diagnosis and Treatment.*
2. *FRIEDENWALD, J., AND RUHRÄH, J. *The Use of the Soy Bean as a Food in Diabetes.*
3. *BARACH, J. H. *The Rôle Played in Auscultatory Signs of the Respiratory System by the Sound-Conducting Property of the Bony Framework of the Thorax.*
4. *RUDOLF, R. D. *A Clinical Method of Estimating the Coagulation Time of the Blood.*
5. *FOX, G. H. *The Clinical Significance of Transitory Delirium Cordis.*
6. SEIFERT, E. C. *Erythremia or Polycythemia with Enlarged Spleen and Chronic Cyanosis.*
7. *MACHT, D. I. *Tuberculosis and Menstruation.*
8. SIMMERS, D. *The Incidence and Significance of Smooth or Indurative Atrophy of the Base of the Tongue.*
9. SLUDER, G. *The Syndrome of Sphenopalatine Ganglion Neurosis.*
10. *KINNEY, L. C. *The Clinical Value of the Cammidge Reaction.*
11. KING, R. W. *The Determination of Chlorine and the Purin Bodies in Urine.*

1. Anders discusses at length the pathological conditions of the pleura in connection with pneumonia from the clinical point of view. He mentions pleurisy, principally of the plastic type, which he has known to precede the infection of the lung; fibrinous pleuritis, present to some extent in practically every case of pneumonia; serofibrinous pleurisy with effusion; and empyema. As to the relative frequence of serous and purulent effusions, statistics differ widely, but post-mortem evidence shows the serofibrinous type to be far more common than clinicians have recognized. Serous effusions are relatively more frequent in adult cases, and purulent effusions strongly predominate in young children. The clinical evidence of these conditions is described according to the usual teachings. Two hundred and eighteen collected cases of empyema are analyzed to determine the time of onset; in 66 of the 218 the empyema appeared before the crisis of the pneumonia, or as a complication, whereas in 152 it developed after the crisis or as a sequel. In localized empyemas stress is laid upon Musser's sign, tenderness on deep pressure in intercostal spaces. In interlobar empyema the value of x-ray evidence is shown. Exploratory puncture, preferably with a small needle and syringe, is the measure by which in positive cases conclusive proof is obtained, but it is stated emphatically that this is to be avoided prior to the time of crisis or the beginning of resolution of the hepatized lung, and in treatment, even of empyema, delay of operation until resolution of the lung has progressed considerably is advised, relying upon simple aspiration to relieve pressure symptoms, particularly displacement of the heart.

2. Friedenwald and Ruhräh recommend the use of the soy bean, obtained from a leguminous plant cultivated extensively for food in China and Japan, as an article of diet for diabetes. Beans grown in America have been shown to contain water 10%, protein 34% and fat 18%. They contain starch, sugar and dextrine equivalent to approximately 10% of starch. Gruel made from soy bean flour 6 oz. to the quart (salted and boiled fifteen minutes and the loss by evaporation made up by adding water) contains: Protein, 8.4%; fat, 3.6%; sugar, 1.8%; and 720 calories per ounce. Meat may be added to make broth. By mixing five parts of soy flour with one of wheat flour, giving a flour containing 20% carbohydrate and 36% protein, muffins can be made. Cases are reported where distinct advantage was obtained by substituting soy flour for the gluten flour previously used.

3. Barach calls attention to certain auscultatory phenomena which are explicable only by the assumption that sounds may be conducted to points somewhat distant from the seat of their production along the bones of the thorax. Such phenomena are the bronchial breathing heard at the acromion process of the clavicle, bronchial breathing heard over the cervical vertebræ and even the cranium, and the bronchovesicular breathing of the upper portion of the right lung.

4. Rudolf describes a new method of estimating the coagulation time of the blood by filling glass tubes of small caliber, kept at constant temperature in a thermos bottle, with blood, and measuring the time after which when these tubes are broken a thread of fibrin strings out between the broken ends.

5. Fox reports six cases in which he observed attacks of transient delirium cordis. Five of these later developed the permanent type of irregularity.

7. Macht has studied the mutual influences of tuberculosis and menstruation. In tuberculosis he notes that although some patients menstruate regularly to the end, a certain number have amenorrhea which may be preceded by menorrhagia. Dysmenorrhea of tuberculous origin may occur. In menstruation he finds an aggravation of all symptoms and an accentuation of all physical signs of tuberculosis. He describes periodic hemoptyses at the time of menstruation.

10. Kinney, as the result of an extensive experience with the Cammidge "c" reaction, concludes that its value is very limited. Neither a negative nor a positive result is conclusive. Very little dependence can be put upon a negative reaction, and a positive reaction can only be considered of value as a confirmatory examination.

[F. W. P.]

## ANNALS OF SURGERY.

### DECEMBER, 1910.

1. DAVIS, J. S. *The Treatment of Scalping Accidents.*
2. MATHEWS, F. S. *The Responsibility of the Tonsil in Tuberculous Adenitis.*
3. JUDD, E. S. *Treatment of Tuberculous Glands of the Neck.*
4. FOWLER, G. R. *Metallic Foreign Bodies in a Bronchus.*
5. *COLEY, W. B. *Sarcoma of the Clavicle: End Results following Total Excision.*
6. *MAYO, W. J. *Transgastric Excision of Calloused Ulcer on the Posterior Wall of the Body of the Stomach.*
7. *MACCARTY, W. C., AND MCGRATH, B. F. *Relation between Appendicitis and Disturbance in the Gastro-Duodeno-Hepatico-Pancreatic Physiological System.*
8. YEOMANS, F. C. *The Technic of Appendicostomy.*
9. MCDONALD, A. L. *Anomalous Renal Arteries and Their Relation to Hydronephrosis.*
10. *MOSCHCOWITZ, A. V. *The Anatomy and Treatment of Undescended Testis; with Especial Reference to the Bevan Operation.*
11. LUSK, W. C. *Resection of the Male Rectum for Cancer, by the Combined Method in Two Stages.*
12. *MACAUSLAND, W. R., AND WOOD, B. E. *Fracture of the Tarsal Scaphoid.*
13. PILCHER, L. S. *Charles Robert Bell Keetley, F.R.C.S.*

5. Coley has reviewed the literature on the subject to date, adding 30 cases to the series collected by Norkes in 1893. Ten of these 30 are reported for the first time. He gives histories of a personal case, 1 of M. H. Richardson, 2 of Gilbert Barling, 1 of Hartley and 1 of W. W. Keen. Five other cases are given, personally observed but not operated on account of the extent of growth when first seen. The 63 cases are tabulated with reference to reporter, date, sex, age, side, site, duration, size, type of operation, type of growth, result, final report, trauma, concurrent disease, glands and mixed toxins. Macroscopic examination of the tissue, clinical history, physical signs and x-ray are sufficient, Coley believes, to those with large experience with bone sarcomata to justify total or partial excision of the clavicle without waiting for the result of microscopic examination. Inasmuch as recurrences in cases of sarcoma of the long bones generally are less than one third as frequent in cases in which mixed toxins have been administered than in cases in which they were not administered, he advocates their use as a routine prophylactic procedure immediately after operation. Antecedent trauma was noted in 7 of 9 cases personally observed. Of the 63 cases, the greatest number occurred in the second decade (19 cases). Six cases were well at the time of the last observation; 1 fifty years (Mott's case probably of central origin), 1 ten years (Wheaton's case, type not stated), 1 five years (Norkes's case of myeloid type), 1 two years (Richardson's case of periosteal type), 1 one and one-half years (Huntington's case of periosteal type) and 1 seven months (Coley's case of central origin). Eleven of the 63 cases died from the effects of operation. In 7 cases recurrence occurred within six months, 1 case recurred in one and one-half years, 1 in four years and 1 in nine years. Primary sarcoma of the clavicle is rare, requires very early diagnosis and very early radical treatment.

6. Owing to the frequency with which gastric cancers develop upon ulcers (71% of 263 cases at St. Mary's Hospital), William Mayo is convinced that chronic caloused ulcer of the stomach is best treated by excision. The difficulty of executing excision of ulcers on the posterior wall of the body of the stomach has been met by the following method of operating in 5 cases with satisfactory results. After opening the gastrohepatic and gastrocolic omenta above and below the ulcer, the ulcer surface is cut free, if possible, from the posterior attachments without opening the stomach. A piece of gauze is packed into the denuded area behind. (This produced hemostasis in 4 of the cases; in 1, vessel ligature was necessary.) The anterior wall of the stomach is then opened and with the fingers behind the entire ulcerated surface is pressed through the anterior incision and the ulcer excised. Gap closed with transverse through-and-through chromic sutures from the mucous side reinforced by several linen mattress sutures from the mucous side. Anterior wall closed. As a safeguard several rubber tissue drains are carried down behind the stomach and brought out at the upper end of the abdominal wound.

7. MacCarty and McGrath have studied at St. Mary's Hospital the condition of the appendix in operated and autopsied cases of gastric, duodenal, hepatic and pancreatic disturbances. Two thousand five hundred and forty-nine autopsies showed partially or completely obliterated appendices in pyloric spasm (17%), gastric and duodenal ulcers (26.9%), cholecystitis (52%) and cholelithiasis (44.8%). A study of the histories of operated cases with reference to the age at onset of symptoms, pain and soreness in the region of the appendix, and the age at time of operation, and a study of the condition of the appendices at operation further suggest the appendix as at least a part of the etiology of some morbid conditions of the stomach, duodenum and gall bladder.

10. "A satisfactory operation for undescended testis has at last been attained." So speaks Moschcowitz of the Bevan operation after employing it in 18 cases, 4 bilateral. The condition of the body of the testes, the epididymis, the vas deferens, the vaginal process, the spermatic cord, the spermatic vessels and the scrotum in cases of undescended testis are carefully considered. "The vas is always of ample length." "The spermatic vessels are poorly developed" and "are deficient in length." Herein lies the explanation of the uncertain or poor results following most operations; for they do not recognize that the deficiency in length of the cord is due to the vessels. Moschcowitz has tried nearly all the methods which seemed to him rational. These he describes and gives his results. The essential part of the Bevan operation is the division and ligation of the spermatic vessels, depending upon the artery of the vas for the nourishment of the testis. In no case did necrosis of the testicle occur, erectile power was to a certain extent preserved, all testes are freely movable and in the very bottom of the scrotum.

12. MacAusland and Wood review the literature on fracture of the tarsal scaphoid and add two cases of their own. In one of their cases the scaphoid was completely removed; in the other, only the displaced fragment. They prefer the former method. Reduction of the displaced fragment should, of course, be attempted before operative treatment. Immediately after operation the foot is placed in a light plaster cast in inversion for three to four

weeks followed by spiral strapping. A light spring plate is advocated to relieve the operated region from strain in weight-bearing. After six to eight weeks baking and massage are instituted. [T. W. H.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 50.

DEC. 13, 1910.

1. *SAUERBRUCH, F., AND HEYDE, M. *The Causes of the Beginning of Labor.*
2. MARKS, L. H. *Effect of Dioxydiamidoarsenobenzol in Experimental Vaccine Infection of the Guinea Pig.*
3. HERING, H. E. *Experiments on the Lethal Dose of the Acid Solution of "606."*
4. WEILER, F. *Treatment of Syphilis with Arsenobenzol.*
5. HAUSMANN, T. *The Question of Thrombosis after Intravenous Infusion of Arsenobenzol.*
6. FRIEDBERGER, E. *Causation and Treatment of Anaphylaxis.*
7. HIRSCHEL, G. *Clinical Significance of Paget's Disease of the Breast.*
8. AST, F. *Results by Mandelbaum's Method of Sero-Diagnosis for Typhoid.*
9. LIPOWSKI. *Treatment of Chronic Obstipation with Paraffin.*
10. SCHWENTER, J. *A New Method of X-Ray Treatment.*
11. CHRISTEN, T. *Treatment by Inhalation.*
12. GRAFF, H. *Rare Stenosis of the Larynx.*
13. STRAUSS, M. *Zykloform: A New Anesthetic for Wounds.*
14. ERBEN, F. *Facial Paralysis in Food Poisoning.*

1. The writers experimented with parabiosis in rats to find out whether or not labor is induced chemically or mechanically. Their work shows that at parturition some active substance circulates which will sicken and may even kill a partner recently joined. The effect is less the longer the partnership has existed, suggesting immunisation. The work is held to strengthen the theory that labor is induced by chemical change. [G. C. S.]

NO. 51. DEC. 20, 1910.

1. *IGERSHEIMER, J. *Dioxydiamidoarsenobenzol with Reference to Its Effect on the Eye.*
2. MARTIUS, K. *The Effect of "606" at the Point of Injection.* (To be concluded.)
3. BOHAC, K., AND SOBOTKA, P. *Minor Effects following Injection of "606."*
4. THERSTAPPEN. *A Case of Regeneration of Bone after Injection of "606."*
5. RÖMER, P., AND JOSEFF, K. *Further Experiments on Poliomyelitis.*
6. BUMKE, O. *Papillary Disturbances in Dementia Precox.*
7. *KELLING, G. *Mechanical Methods of Stopping Dangerous Hemorrhages from Stomach or Bowel.*
8. SCHULZE, W. *Value of Subcutaneous Lymph Glands for the Diagnosis of Phthisis.*
9. KIRCHHEIM. *Action and Dosage of Adrenalin for Subcutaneous Injection.*
10. SCHÄFER, P. *Clinical Results with a New Hypnotic "Adalin."*
11. SCHULZ, H. *History of Poisoning with Henbane.*
12. HARRASS, P. *Genital Prolapse and Hernia following an Old Injury to the Pelvis.*
13. RACH, E., AND V. REUSS, A. *Clinical Condition of the Liver in Scarlet Fever.*
14. FRIEDBERGER, E. *Nature and Significance of Anaphylaxis.*

1. The writer reviews the subject, reports a few cases and concludes by saying that up to the present time no injury to the eyes has been caused by the use of "606," and that in lues affecting the eyes or optic nerves the drug gives splendid results.

7. Kelling reports having tried various mechanical methods of stopping hemorrhage from the stomach or intestines. He believes that they deserve more recognition when operation is advised against. [G. C. S.]

NO. 52. DEC. 27, 1910.

1. *TEIL, T., AND LINSER. *An Attempt to Cure the Sickness of Pregnancy by Injection of Pregnancy Serum.*
2. *RIEHL, M. *Lowering the Temperature of Internal Organs by External Application of Cold.*
3. BUSSOW, B. *An Epidemic of Flexner Dysentery in a Hospital.*
4. KOCH, A. *"Endotin" (Tuberculinum Purum).*
5. GENNERSICH. *Technic and Contra-indications of the Salvarsan Treatment ("606").*
6. RAVASINI, C. *Salvarsan in Eighty Cases of Syphilis.*
7. SCHÜLE. *Nerve-Points and Massage by the Method of Cornelius.*
8. RICHTER, P. V. *Intra-orbital Hemorrhage in Exophthalmus Intermittens.*
9. MÜLLER, H. *An Automatic Apparatus for Urethral Injections.*
10. VANSELOW. *The Disinfection Box for Midwives.*
11. *MARTIUS, K. *Local Effect of "606."* (Concluded.)

1. The writers discuss the theoretical explanations of herpes gestationis and report a case which yielded promptly to three injections of serum from normal pregnant women after having resisted many other forms of treatment. The eruption recurred after about five weeks of health and again yielded quickly to the same treatment.

2. Riehl studied the temperatures of the stomach and rectum in a series of ten patients before and after the application of cold externally to the abdomen. The results are given in a table showing the sex, weight, height and hemoglobin of every patient, as well as the temperatures before and after and the duration of every experiment. He obtained differences in the stomach temperature ranging between 0.5° and 1.8° C. In one case the rectal temperature did not change. The greatest rectal variation was 1.1°. He raises the question whether this procedure might not help to stop gastric hemorrhage either by change of temperature favoring clotting or by causing contraction of the capillaries.

11. Martius concludes in this number an exhaustive paper on the effect of "606" at the point of injection. His work includes the examination of several cases post-mortem. He says in the summary that after subcutaneous or intramuscular injections of the drug in any dose or in any solution all tissue which came in direct contact with it becomes necrotic. Necrosis of nerves may explain the frequent neuritic symptoms and perhaps the disturbances of the bladder. Necrosis of the skin apparently can be avoided by rightly choosing the point for injection. The necrotic tissue may slough off months later and arsenic may be found in it. In view of the rapid decomposition of the drug it is doubtful whether it can be absorbed slowly as from a depot, but harmful derivatives perhaps are so absorbed. The neighboring veins are always thrombosed. Severe deep necrosis may occur and infection may lead to death. (The summary is too long to be given in full.) [G. C. S.]

BERLINER KLINISCHE WOCHENSCHRIFT. No. 49.

DEC. 5, 1910.

1. TOUTON. *Practical and Theoretical Review of Arsenobenzol (Ehrlich-Hata's "606").* (To be continued.)
2. GÉRONNE, A. *The Intravenous Treatment of Syphilis with Ehrlich-Hata's "606."*
3. *HAMMERSCHLAG. *Indications for the Artificial Interruption of Pregnancy.*
4. *SOLIERI, S. *Hysteropexy and Pregnancy.*
5. SALZBERGER, M. *Concerning the Symptomatic Occurrence of Myotonic Disturbance in Inflamed Muscle.*
6. LEHMANN, F., AND ZINN, W. *A New Pathological Urinary Pigment.*
7. VIRCHOW, C. *Metabolism Experiment with "Riba."*
8. WOHLGEMUTH. *Pathological Action of Ferments.* (Conclusion.)
9. FORSTER. *A Forensic Review of the Dazed Condition.*

3. Hammerschlag gives a brief introduction stating the legal attitude in regard to such operations. He then takes up hyperemia gravidarum, heart lesions, phthisis and tuberculosis of the larynx, kidney diseases, including pyelitis, diabetes mellitus and chorea. In each of these he points out the definite indications for interruption of pregnancy and shows how rarely is this operation demanded. He presents statistics to support his statements. In conclusion he advises in all cases a consultation with a

specialist before the decision is reached to undertake this operation.

4. The author points out the complications in subsequent pregnancies which are liable to follow this operation — dangers to the fetus and to the mother during labor. He also describes different methods of operation and after-care which will give satisfactory results in subsequent pregnancies and also prevent pathological conditions returning after pregnancy and labor. [J. L. H.]

No. 50. Dec. 12, 1910.

1. Bonhoeffer, K. *Treatment and Diagnosis of Progressive Paralysis.*
2. Goldbach. *Late Reaction in the Application of Preparation "606."*
3. Rille. *Possible Secondary Effect upon the Cerebral Nerves in the Use of Ehrlich's Preparation "606."*
4. Bruhns, C. *The Question of Treatment with "606."*
5. Touton. *Practical and Theoretical Review of Arsenobenzol (Ehrlich-Hata's "606").* (Conclusion.)
6. Strauss, H. *The Importance of Salt in Metabolism.*
7. Cassirer. *Recent Progress in Acute Spinal Infantile Paralysis.*
8. Salkowski, E. *The Value of the Urinary Condition in the Diagnosis of Carcinoma.*
9. Heile. *Surgical Treatment of Spina Bifida with Hydrocephalus.*
10. Bruhl, G. *Otic Sclerosis.*
11. Benda. *The Question of the Preservation of Surgical Material for Microscopical Diagnosis.*
12. Friedberger, E. *The Theory of Anaphylaxis.*

Deutsches Archiv für Klinische Medizin. Bd. 100.

Hefft. 5–6. Nov. 23, 1910.

1. v. Wyss, W. *Recording of Heart Sounds with the Einthoven Galvanometer and Studies on Gallop Rhythm.*
2. *Trembar, F. *Lymphosarcomatosis and Positive Wassermann Reaction.*
3. Ebstein, W. *A Study of Catarrh.*
4. Siebeck, R. *The Spirometric Method.*
5. *Massini, R. *Nitrobenzol Poisoning. The Blood Picture and Relation of the Size of the Heart.*
6. *Meyer-Betz, F. *Observations on a Peculiar Case of Hemoglobinuria Associated with Muscle Paralysis.*
7. *Strauch, F. W. *The Justification of the Ad. Schmidt Nuclear Test.*
8. Knick, A., and Pringsheim, J. *Internal Disinfection. The Antiseptic Influence on the Bile of Disinfectants Taken Internally.*
9. Grau, H. *Effect of Albumin-Like and Albuminous Bodies on the Blood Coagulability.*
10. Faulhaber. *The Importance of Röntgen-Ray Investigation in Diagnosing Cancer of the Stomach.*
11. Weizsäcker, V. *Essay on the Velocity of the Blood in Anemia.*

2. Trembar reports a case of lymphosarcomatosis in which there was a positive Wassermann reaction. The diagnosis in this case seems sure and great effort was made to rule out syphilis from the history, autopsy, etc. Also, great care was taken in the Wassermann tests and many were tried. It certainly seems as though syphilis could be excluded and the positive serum reaction relied upon.

5. Massini reports on two cases of nitrobenzol poisoning. The blood pictures in these cases are carefully worked out. The blood picture was similar to the embryonal types of anemia seen in experimental anemias. This shows a sudden fall in red cells and suggests a destruction temporary at least of the blood-forming areas. The increase in white cells and swollen spleen are accounted for by rapid destruction of red blood cells.

During the acute poisoning there is dilatation of the heart and vessels causing gallop rhythm and a fall in blood pressure.

6. Meyer-Betz reports a case of hemoglobinuria associated with muscle weakness. The muscle weakness amounting almost to a paralysis would eventually pass off, but it would take weeks. Finally, signs of contracture appeared, although in a note of correction at the end he mentions that the man is now apparently as strong as ever, although evidence in the muscles of former injuries still persist. The hemoglobinuria differs from the paroxysmal type in that it is not produced by chilling and the characteristic hemolysin is not present. The patient had several attacks.

7. The Schmidt nuclear test has been tried out *in vitro* by this author, who obtained quantities of gastric and pancreatic juice. He concludes that pure gastric juice leaves tissue nuclei unchanged. Pure pancreatic juice dissolves nuclei completely in six to eight hours. Pure intestinal juice does not affect cell nuclei, and intestinal juice obtained by crushing may dissolve the nuclei. He thinks, therefore, that the Schmidt test is reliable.

[C. F., Jr.]

## Obituaries.

### JOHN FLINT, M.D.

Dr. John Flint, a grandson of Dr. John Flint, of Boston, died at the Naval Hospital at Chelsea, Mass., Jan. 11, at the age of thirty-four.

Dr. Flint was born in Peru, April 4, 1876, his father at that time being engaged there in railroad construction and management. Preparing for college at the Roxbury Latin School, he graduated from Harvard in the class of '98, He at once enlisted as a private in the Sixth Massachusetts Volunteer Regiment and served in Porto Rico. The following year he entered the Harvard Medical School, graduating in 1903 and later serving as a house officer at the Massachusetts General Hospital. In 1904 he was appointed an assistant surgeon in the navy, but resigned in a few months and went to Chicago to engage in practice. He re-entered the navy in the spring of 1906 and was stationed at Norfolk, Va., until the fall of that year, when he went to the Naval Medical School at Washington. From this post he was ordered in 1907 to the Naval Hospital at Cavite and later served on the gunboat *Wilmington* on the Chinese coast. Returning to America in 1909, he was ordered to the United States Naval Hospital in Philadelphia, and then in the autumn of the same year to the Naval Hospital at Chelsea. His membership in medical and allied societies included the Boylston Medical Society, the Aesculapian Club of Boston, and the Massachusetts General Hospital House Officers' Alumni Association. He was also a member of the University Club of Boston, the Harvard Club of New York and the Army and Navy Club.

Dr. Flint's untimely death is a matter of deep regret to his many friends and associates. Young as he was, his experience in the medical work of the navy was already broad, and there was great promise of a still more successful career in the future. His death will prove a distinct loss to the Service.

### CHARLES E. INCHES, M.D.

Dr. Charles Edward Inches, who died in Boston on Jan. 12, was born at East Boston on Aug. 31, 1840. He received the degree of A.B. from Harvard in 1861, and that of M.D. in 1865. While in the medical school he

served as a surgical interne at the Massachusetts General Hospital, and before his graduation was commissioned assistant surgeon of the Thirty-Seventh Massachusetts Regiment of the Sixth Army Corps. With this regiment he served until it was mustered out, and was then transferred to the Twentieth Massachusetts Regiment, with which he remained till the close of the Civil War. Returning to Boston in November, 1865, he began the practice of medicine and soon after was appointed physician to the North End Dispensary. In 1883 he was married to Miss Louise Pomeroy, of Troy, Pa. He was a Fellow of The Massachusetts Medical Society. He is survived by his widow, by a daughter, and by two sons.

## Correspondence.

### SEX AND EDUCATION.

BOSTON, Jan. 10, 1911.

*Mr. Editor:* May I call the attention of your readers to the article on Sex and Education by W. D. Parkinson in the *Educational Review* for January, 1911?

It contains, I think, more true wisdom on this topic than all the books and articles that have appeared within the past few years.

Very truly yours,
RICHARD C. CABOT, M.D.

### A CENTENARIAN.

WAREHAM, MASS., Jan. 16, 1911.

*Mr. Editor:* Since to attain the age of one hundred years is rather unusual and worthy of note, I wish to report to the JOURNAL that Mrs. Susannah K. Tobey, of this town, yesterday, Jan. 15, celebrated her one hundredth birthday.

Very truly yours,
CHARLES E. MORSE, M.D.

### APPOINTMENT.

DR. C. C. CRANE, formerly assistant in the Orthopedic Department of the Massachusetts General Hospital, and at present in the orthopedic service of the Children's Hospital in San Francisco, has been appointed assistant in orthopedics in the Medical School of the University of California.

### SOCIETY NOTICE.

THE BOSTON MEDICAL LIBRARY IN CONJUNCTION WITH THE SUFFOLK DISTRICT MEDICAL SOCIETY.—Medical Section meeting, John Ware Hall, Feb. 1, 1911, at 8.15 P.M. "The Climatic Treatment of Tuberculosis," Guy Hinsdale, M.D., of Hot Springs, Va.

EDWIN A. LOCKE, M.D., *Secretary*, 311 Beacon St.
HENRY JACKSON, M.D., *Chairman*, 380 Marlborough St.

### RECENT DEATHS.

INCHES, CHARLES EDWARD, M.D., M.M.S.S., died in Boston, Jan. 13, 1911, aged seventy years.

DR. DARWIN COLVIN, a prominent physician and surgeon of Wayne County, N. Y., who was graduated at Geneva in 1844, died at his home in Clyde on Jan. 8, in the eighty-ninth year of his age. He was at one time the president of the New York State Medical Association, of which he was one of the founders.

DR. LABAN L. BRADSHAW, of New York, died on Jan. 9, in his fifty-ninth year. He was graduated from Bellevue Hospital Medical College in 1880.

DR. HENRY RUTGERS CANNON, who died last week at Elizabeth, N. J., was born in New Brunswick in 1821. He had practised medicine for sixty-eight years.

DR. WILLIAM WOLFE LESEN, of New York, died from cerebral apoplexy on Jan. 11, in his thirty-third year. He was graduated from the medical department of Columbia University in 1903 and at the time of his death was visiting physician to the New York City Children's Hospital and Schools.

DR. JOHN P. GILBERT, of Lyons, N. Y., died on Jan. 8. He was born at Lyons in 1828 and was graduated from the New York University Medical College in 1856. He was at one time in charge of the Albany Eye and Ear Infirmary.

DR. EDWARD PAULDING, of New York, died from cerebral apoplexy on Jan. 10. He was a native of Kingston, N. Y., and forty-five years old, and was graduated from the College of Physicians and Surgeons in 1890.

DR. HILARY TUCKER SWEENEY, who died of heart disease last week in East Boston, was born there in 1866. He graduated from the Harvard Medical School in 1889, and since that time had practised medicine in East Boston. He is survived by his widow and by one child.

DR. WILLIAM GRIER, who died on Jan. 11, at Washington, D. C., was born in Ireland on Oct. 5, 1816. He was formerly surgeon-general of the United States Navy, and at the time of his death the oldest officer on its retired list.

DR. CHARLES JOHN KIPP, who died on Jan. 13, at Newark, N. J., was born in Hannover, Germany, on Oct. 22, 1838. He came to the United States in 1854, and in 1861 received the degree of M.D. from the College of Physicians and Surgeons, New York. From 1862 to 1866 he served as a surgeon in the United States Army. In civil practise he became distinguished as an ophthalmologist and otologist, and since 1880 had been surgeon to the Newark Eye and Ear Hospital. He was a member of the Ophthalmological Society of Heidelberg, of the New Jersey Medical Society, of the New York Academy of Medicine and of the New York Pathological Society. In 1907 he was president of the American Ophthalmological Society and in 1908 of the American Otological Society. He was unmarried.

DR. EDWIN F. VOSE, who died on Jan. 13, at Portland, Me., was born in Watertown, Mass., in 1850. He graduated from Boston University in 1876 and had been a resident and practitioner in Portland for over thirty years. He was for a time president of the Maine State Homeopathic Medical Society.

### RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JAN. 7, 1911.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | 1,814 | 389 | Waltham | 13 | 3 |
| Chicago | 776 | 181 | Brookline | 4 | — |
| Philadelphia | — | — | Chicopee | 12 | 4 |
| St. Louis | — | — | Gloucester | 3 | — |
| Baltimore | — | — | Medford | 8 | — |
| Cleveland | — | — | North Adams | 8 | 4 |
| Buffalo | — | — | Northampton | 9 | 1 |
| Pittsburg | — | — | Beverly | — | — |
| Cincinnati | — | — | Revere | 4 | — |
| Milwaukee | — | — | Leominster | 3 | — |
| Washington | — | — | Attleboro | 2 | — |
| Providence | — | — | Westfield | 2 | 1 |
| Boston | 227 | 50 | Peabody | 3 | — |
| Worcester | 41 | 9 | Melrose | 2 | 1 |
| Fall River | 40 | 17 | Hyde Park | 3 | 2 |
| Lowell | 43 | 14 | Woburn | 4 | 2 |
| Cambridge | 26 | 4 | Newburyport | 2 | — |
| New Bedford | 33 | 12 | Gardner | 4 | 1 |
| Lynn | 20 | 7 | Marlboro | 5 | 2 |
| Springfield | 29 | 3 | Clinton | 5 | — |
| Lawrence | 20 | 12 | Milford | — | — |
| Somerville | 23 | 3 | Adams | 4 | 2 |
| Holyoke | 18 | 6 | Framingham | — | — |
| Brockton | 7 | 0 | Weymouth | — | — |
| Malden | 9 | — | Wakefield | 2 | 2 |
| Haverhill | 8 | 3 | Southbridge | — | — |
| Salem | 14 | — | Plymouth | — | — |
| Newton | 13 | 3 | Webster | 2 | 2 |
| Fitchburg | — | — | Methuen | 1 | — |
| Taunton | 22 | 4 | Wakefield | — | — |
| Everett | 4 | — | Arlington | 6 | 2 |
| Quincy | — | — | Greenfield | 2 | — |
| Chelsea | 11 | 3 | Winthrop | 3 | — |
| Pittsfield | — | — | | | |

JOHNS HOPKINS HOSPITAL
JAN 30 1911



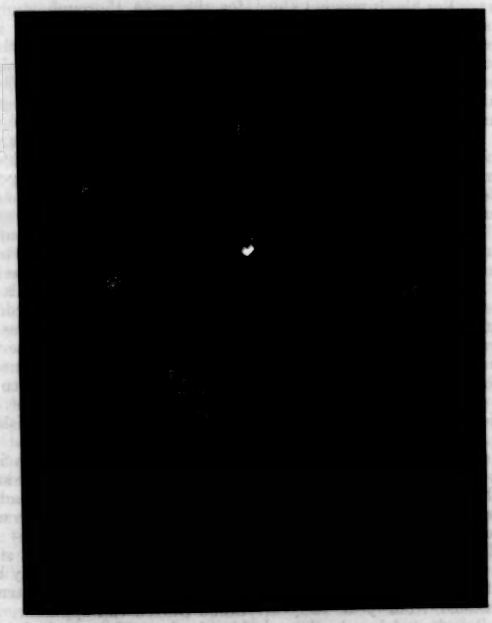
## Original Articles.

### HERBERT LESLIE BURRELL, M.D. (1856–1910). IN MEMORIAM.*

TRIBUTES FROM DRS. E. H. BRADFORD, F. S. WATSON AND GEORGE H. MONKS.

DR. E. H. BRADFORD: It was the custom of the Society of Medical Improvement, even in its earlier days, to hold memorial services in honor of its deceased members, and the practice is a commendable one. The standard of service of the medical profession in this community has always been high, and this society for nearly a century has had as its members many of the leaders of our profession. The custom, however, is one not to be too frequently observed. These occasions should never be made public demonstrations of the private grief of friends. The world has little use for mourning. It needs encouragement; examples to stimulate to greater exertion; it is, therefore, proper that those who take part in such occasions as these should show a warrant for their claim and for the justness of their request that a new name be placed on the honor rolls of this honorable society.

The mere mention of Dr. Burrell's varied services is an indication of his unusual qualities. For any one in a few weeks to have organised and equipped a relief ship is no small achievement, but it was the work of a master mind to have transformed a coaster into a model hospital ship, studied abroad and prized by the national government. Any one who had an opportunity to visit the hold of the *Bay State* on her return from Santiago with her precious cargo of fever-stricken Massachusetts soldiers, and to bear witness to the fact that the air even over the bilge keel was as fresh as that of the open ocean, and who saw a service and organization superior to that of the best of hospitals, could recognize the debt not only of the suffering Massachusetts soldiers, but that of the commonwealth, to this volunteer surgeon, who directed and commanded three expeditions of relief during that summer of anxiety and confusion. In a monarchy he would have been granted a knighthood, but in our simpler republic he won the highest of all rewards — of satisfaction in good work well done in a brilliant achievement for the larger aiding of humanity.



As a surgeon-general of our state he greatly increased the efficiency of the medical service of the militia and he left it a model in excellence of equipment.

His work on the Reception Committee for the Boston meeting of the American Medical Association placed him foremost among organizers for such undertakings, and in the reorganization of the Red Cross Society, in the establishment of the Society of Military Surgeons, as secretary

* Presented at the Boston Society for Medical Improvement (an Historical and Memorial Society), Nov. 14, 1910.

of the National Surgical Association, and as president of The Massachusetts Medical Society, he proved the high quality of his leadership. The presidency of the American Medical Association came to him as a well-won honor, but his careful plans for the advancement of the interests of that powerful organization were frustrated by the malady which brought his labors to an end.

These achievements, though unusual in character, do not represent the true measure of his service; they were the diversions, episodes in the career of a young man of energy and force. The chief purpose of his life was to aid in the development of the profession of surgery. As a medical student visiting a New York hospital, he silently pledged his energies to the advancement of that noble art. For him it was not alone the sick man who was to be aided. He endeavored to help the profession itself in such directions as seemed to need strengthening. He had little sympathy with those who made their calling chiefly an opportunity for personal vainglory, who used for personal gain their school or hospital positions. For him these positions brought with them a duty to the community and to the profession which he most loyally fulfilled.

The practice of surgery in America thirty years ago was excellent in quality, but there were marked defects in our hospital organizations which cramped the development of the average surgeon. Three months of active hospital surgical work and nine months of general practice did not offer the best chance for the training of surgeons of the greatest experience. It was early Dr. Burrell's endeavor to establish a continued in the place of the short service, then universal in American hospitals, and he succeeded early in his career in arranging a continued surgical service at the Boston Children's Hospital, although in the large civic hospital with which he was connected all of his professional life the establishment of a single continued service under one head was impossible. The grouping of services of a selected number of surgeons, graded according to skill and seniority, and working under one leadership, seemed to give an organization with many advantages. It furnished a stimulus from combined efforts with a single direction continued from year to year. This system was finally adopted largely through the efforts of Dr. Burrell.

The teaching of surgery, formerly consisting of brilliant lectures by surgical leaders, or clinics where the masters of their craft displayed their skill in rare operations to a sensation-loving class, needed to be changed. The careful study of patients, by small groups of students, who, under the direction of trained teachers, learn thoroughness of observation and skill of hand, presents a system of education which is of high excellence, but one which needs the enrollment of a number of earnest instructors, working less for personal advancement than from devoted interest in their profession. It was to the development of this system that Dr. Burrell gave the chief energies of his life.

Medical education twenty years ago was excellent, but the rapid growth of the sciences of medicine has made the problems of our medical schools much more difficult. When medical teaching was under the charge of the professors of a few departments, if each could attempt to make his course the most thorough possible, an excellent school resulted, but this system brought confusion to the average student when the departments became more numerous and there was no proper sequence or proportion in the instruction given. How earnestly and devotedly Dr. Burrell worked to perfect such a grouping and arrangement of courses as would give to the student some knowledge of everything that was needed for the practitioner, and an opportunity for the more thorough study of that group of subjects which was most important to each individual, is known best to the few who witnessed his self-sacrificing zeal and singleness of purpose. The subordination of the individual to the system and the perfection of that system was the creed of his endeavor, and we are to-day beginning to see the results of his labors. When he erred it was in the excess of zeal which at times led him to lose a nice sense of proportion. He may be said at times to have thought in too large print. A sonnet in scare lines or shouted in a megaphone is less effective than if presented in a more simple form or whispered to attentive rather than startled listeners. There was sometimes too much energy in his attack, and this aroused opposition, but something must be pardoned in the earnest. Peter the Hermit doubtless failed to use the tempered phrase, and those who labor in large undertakings have little time for the practice of milder methods. It was to the robustness of his effort and the vigor of his onset that Dr. Burrell owed the accomplishments of his energetic life.

This is the record which is presented to this society. It is a record to be studied. We admire those who work successfully advancing themselves, but we honor most those whose lives show a long struggle to help others. It is a record which can be made to serve as a stimulus in the hope that such years of effort may bring permanent results. It is a record the contemporaries of Herbert Leslie Burrell can applaud. It is a record that his friends can be proud of. It is a record which we can imagine that those masters of the past whose pictures look down upon us from the walls of this room dedicated to the best traditions of our profession we can fancy would rejoice in with their praise of "well done." It is a record as to which the words of the prophet Isaiah can be used in asking that we may "declare his doings, make mention that his name be respected, for he did many excellent things."

DR. FRANCIS S. WATSON: To have developed one's native attributes to the utmost of one's power, to have devoted them to the service of one's fellows in humane works, to have preferred serving good causes to the promptings of personal ambition, to have been intrusted

with offices of much responsibility involving a great amount of labor and to have discharged the duties belonging to them unfailingly, ably and thoroughly in every instance is assuredly to have made all that any man can make of his life and a great deal more of it than most men do.

Herbert Burrell did just these things with his life, and Death, in writing "Finis" on the last page of the record, closed an unusual career.

The titles of the principal chapters of the record read thus: Surgeon to the Carney Hospital, surgeon to the Children's Hospital, senior surgeon in chief to the Boston City Hospital, surgeon-general of the Medical Corps of the Massachusetts Militia, commander of the Hospital Relief Ship *Bay State* sent by Massachusetts to Cuba during the war with Spain, president of the New England Branch of the National Red Cross Association, president of The Massachusetts Medical Society, president of the American Medical Association, Homans professor of surgery at the Harvard Medical School.

In all of these important positions and institutions his influence was strongly felt, and in all of them improved conditions resulted from his efforts.

He began his career without the support of friends influential in the profession or the benefits derived from a college education. All that he achieved, all that he won, was due to his unaided energy, strength of character, steadfastness of purpose and self-training. In some measure doubtless his success is to be referred to the effort demanded to surmount the barriers that he encountered, for he was of those whose forces are fed by obstacles and whose resolution hardens in the face of difficulties.

He was properly ambitious and sought to secure the highly honorable positions to which he attained, but the wish for personal advancement never outran his desire for the general good, and in the thirty years of close association that I had with him I never saw Herbert Burrell prefer his own advantage to the best interests of a good cause.

His own words which I quote from a letter that he wrote to me some time since allow us to judge of his views with regard to what I have just said. The letter concludes thus: "There is a great work for us still in the future and I believe it to be this: That we shall strive to make this the center of the best surgery that is done in the world. Not that we can do such surgery, but that by co-operation in the work *we may help the men who are striving to advance surgery, and not themselves, to accomplish their end.* . . . It will make but little difference what I do perhaps, except it be that I may make it easier for other men to do the work that you and I would like to have done."

Like many men of positive natures, he created opposition to his projects, and of this opposition he was sometimes impatient, having a naturally high temper, which, however, he usually controlled with a masterful hand.

He won most of his victories by hard hitting power, great energy, a clear view of the goals he desired to reach, and by holding inflexibly to the paths that led to them, rather than by persuasive influence.

He was a most generous opponent and no one ever acknowledged his own mistakes with greater freedom or frankness. What he says in another letter bears testimony to the truth of this statement, as does a little episode to which, though personal, I may be permitted to refer afterward. In the letter he speaks as follows:

"I think I see the truth so clearly that I become impatient with some who differ with me. The heat of the discussion at the moment makes me forget the amenities. I know the defect and shall always fight against it. Thank heaven you are right in not attributing it to a dictatorial or arbitrary spirit, but the world so regards it. I hate that spirit heartily, but I give the world the impression of possessing it. . . . I shall keep your letter and read it from time to time. I thank you for its straightforward and friendly chiding which I need."

The personal incident which gives a glimpse of his open-mindedness occurred in the course of a discussion of a matter with regard to which we held opposite views. The argument became heated, and at length led to some very sharp words from me. His anger was thoroughly aroused, but he presently succeeded in controlling it, and, after a few moments' silence, he turned to me and said with a smile, "Well! I suppose we shall go on fighting to the end of the chapter, but, thank heaven! we are nevertheless good friends because of that," and with a hearty handshake he bade me good-night.

How disinterestedly he worked for the improvement of surgery, for the general welfare of his associates, and the efficiency of the institution is shown in his action with reference to establishing continuous service in the surgical wards of the Boston City Hospital. He became convinced of the desirability of this system early in his career, and when he had become a member of the senior staff he presented a plan by which he believed that the efficiency of the surgical work would be increased and by which his younger colleagues would be much benefited through having an earlier opportunity to do major surgery than was the case under the system then in vogue. It was also a plan which necessitated his own withdrawal from the position of Senior Visiting Surgeon which he then held and becoming again one of the junior grade, from which he had recently been promoted. The sacrifice was made greater by the fact that this would deprive him of the control of an independent clinic during his term of teaching in the Harvard Medical School and thus make it more difficult for him to demonstrate his ability as a teacher — an important loss, inasmuch as he was at the time a candidate for a surgical professorship in the school.

He strove to secure the acceptance of this plan which was to his own disadvantage with as much zeal as most men display in seeking

ends by which they will personally profit, and finally succeeded in having it adopted. This was but one of many public-spirited acts that marked his progress in the profession.

As an organizer and administrator he showed conspicuous power. Few men in our profession have these qualities or seek to develop them, and in consequence of this fact he had a large share of such tasks thrust upon him. He executed them strikingly well and thereby placed the profession not of this town alone but of the whole country much in his debt. Of the qualities that contribute to make the successful organizer he had in marked degree those of being able to select the man best suited to carry out each detailed part of the work and of not interfering with his subordinates once he had placed the responsibility in their hands and was satisfied that they understood the nature of it.

He was essentially a constructive worker and never sought to tear down what other men had reared until he was convinced that he could put something better in its place.

He compelled the admiration of all who stood near enough to him to know how broad his aims were and how high the motives by which he was guided while seeking their fulfillment.

A friend who knew and who loved him well put into words to me not long since the dominant note of his life and character in saying that "*he had a passion for service.*"

What that service was may be measured by the lack felt in many important places now deprived of the support of his firm hand, strong will and public spirit. Time only serves to make more clear the bigness of this man and has brought to many who had not fully recognized it while he lived the realization of how greatly he strove for the good of others and of the enterprises to which he was bound, how little he considered himself and how high was his purpose.

DR. GEORGE H. MONKS: I well remember that on one occasion when Dr. Burrell and I were talking about the education of children, he said to me something like this: "I don't know how far I can influence the development of my boys' characters, but I *do know* that I shall try in every way to impress them with the importance of having the highest ideals, and of working towards them."

As I think over Dr. Burrell's career I feel more and more convinced that in his own case the honest pursuit of high ideals amounted almost to a passion with him; and that it was this characteristic, aided, of course, by his superb courage, his loyal devotion to a cause and his persistent and well-directed effort which enabled him to accomplish all that he did in his fifty-four years of life. When once convinced that a certain thing ought to be done, and that he was the person to do it, he never hesitated, but, after thinking out all the essential details with the greatest care, he plunged into the midst of the work, full of energy and interest, and continued in that work, never thinking of his own personal sacrifices, of the loss of time or of the trouble he was giving himself, until all the obstacles were overcome and the task was accomplished.

I have known him over and over again give up opportunities which offered the prospect of large financial returns to attend to matters which for him had no return whatever except the satisfaction of work well done.

Although the principal achievements of his life are familiar to us, it might be well to see what a list they make if we put them together.

Not only did he pass through the various grades in the surgical departments of the Boston City Hospital, the Children's Hospital, the Carney Hospital and the Harvard Medical School, reaching finally in each of them the highest position, but, as we all know, his record of accomplishment in other field of work was in a way even more brilliant.

In 1893 he was appointed by Governor Greenhalge surgeon-general of the state, and the reforms he instituted and the innovations he introduced while in this position resulted in a system so remarkable as to excite the admiration of all who knew of it and to lead to its being adopted by other states.

He was secretary of the American Surgical Association (1895–1901) and all the older men of that association well remember the powerful uplift that he gave to that organization when he was in office.

If I mistake not, the original idea of fitting up the hospital ship *Bay State* during the Spanish War emanated from Dr. Burrell's fertile brain. How well he succeeded in awakening the public interest in that great undertaking, and how much of his time and strength were given in bringing it to fruition, we all know. It was no surprise to any one when Dr. Burrell was placed in charge; he was obviously the one man for the place. We also know about his three trips to Cuba and Porto Rico; in fact, his relief work in the *Bay State* has been called "his most notable achievement." All these things are now matters of history.

The *Journal of the American Medical Association*, referring to the meeting of the association in Boston in 1906, said, "The success in every detail, the harmony among vast numbers and the elaborate preparedness for the meeting were subjects of remark by all who attended the Boston session." Without question, the great success of this meeting was due to Dr. Burrell more than to any one person.

And, finally, he became president of the American Medical Association. Soon after this there appeared in the Association's journal of June 15, 1907, an editorial under the heading "The President Elect." It began as follows:

"The sturdy fidelity of New England to the best interests of the profession and its manifold contributions to the science of medicine and surgery are fittingly recognized in the election of one of its brilliant sons to the presidency of the American Medical Association. True to heredity and tradition, the sons of New England

have not hesitated to be pioneers in medical fields, and many a new trail has been blazed by them. They have always been ready to give their best effort and to make sacrifices for the realization of ideals, for the elevation of standards and for the equalisation of privileges. Any fit representative of such a noble section of our country must stand high in ideals, ability and attainments. Such a man is Herbert Leslie Burrell, president-elect of the American Medical Association. Imbued with high ideals for the usefulness of the profession to the public, of notable ability tested in many a trying situation and with a magnificent record of achievements behind him, Dr. Burrell well represents his part of the United States, and his position will emphasize to the New England men their recognized part in shaping the medical affairs of this nation."

As president of the Association his course was such as to reflect further credit and honor not only upon himself, but also upon the section of the country from which he came.

Still later he became president of the Massachusetts Branch of the American Red Cross Society, a position which he held up to the time of his death last April.

As a surgeon, especially in his earlier years, Dr. Burrell did a great deal of excellent and original work, and the articles which he wrote were of a high order. I well remember his oration before The Massachusetts Medical Society on the out-of-door treatment of tuberculosis, in which he urged, and I think he was the first to do so, that this treatment was as applicable for surgical as for medical cases.

As a teacher of surgery and as an organizer of the teaching department, — and this work stood very close to his heart, — he was admirable. His long and faithful service in these directions is so well known as to call for no further comment.

I cannot, as one of the surgical staff of the Boston City Hospital, let this opportunity pass without a word of acknowledgment, on my part at least, of the very large debt which we owe to Dr. Burrell for what he has done for that institution. I do not hesitate to say that most of the great improvements on the surgical side of the hospital which have been made during the last twenty years were brought about as a result of Dr. Burrell's initiative, and of his hard and devoted labor in carrying his ideas into effect.

In speaking or writing about Dr. Burrell, our thoughts are so fully taken up by a consideration of the work that he accomplished, that too little, I think, is said about him as a man.

In his relations with other men he was always straightforward, honest and generous. He took the greatest interest in the younger men, and often went out of his way and put himself to a great deal of trouble to help them out of their difficulties and to give them opportunities to work. His kindness and unselfishness in this respect were especially characteristic of him. To his friends he was ever devoted and loyal. Such few faults as he had, in view of his well-known sterling qualities and of his magnificent accomplishments, were not such as to leave any lasting impression.

Such is the man who is with us in memory to-night — a man of strong character, of unselfish devotion to high purposes, unfailing courage, sterling honesty, persistent industry; a man whose life was largely given up to the pursuit of the highest ideals, calculated to uplift the medical profession and to extend its usefulness.

His brilliant achievements reflect credit not only upon himself, but upon this entire section of the country.

His life and his works will long remain as a shining example of what can be done by devotion to lofty ideals combined with the courage, the intelligence and the hard work necessary to make these ideals effective.

## THE TIME AND METHOD FOR PROSTATECTOMY.*

BY BENJAMIN TENNEY, M.D.,

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With all that has been written and demonstrated of the operation of prostatectomy and its results there is yet too large a part of the profession and the public who look back to the early days of surgery for their decision. Abdominal surgery has not offered safe treatment for much more than twenty years, and prostatectomy is a later operation to be put on the safe list. In 1906 Dr. Chase and I published a paper on the mortality from prostatectomy,[1] its fatal periods and its causes. Among other records we looked up the mortality in public hospitals from 1895 to 1905 and found it remarkably high. In one splendid institution one case in three had died, and in another one case in five. During that period thousands of house officers, students, dressers, nurses, ward men and members of the medical staff had seen a few of these cases and decided that the risk was too great to justify the operation on their patients and friends, and that impression still clings to them and influences their advice. It is with the hope of altering this impression among some of my medical friends that this paper is written.

There are three classes of men over forty who consult a physician for symptoms which may be due to prostatic obstruction. First, those with residual urine, without cystitis, whose complaint is of frequent urination, night urination, difficult urination or albuminuria. Second, those with residual urine and infected bladders. Third, those more or less dependent on a catheter.

With all these patients the same fact applies. It is not the hypertrophy of the prostate that makes the patient suffer; it is the obstruction. I have removed a nodule the size of the end of my thumb from a man who had passed no urine without a catheter for more than a year, and a huge prostate weighing 256 gm. from a man who had used a catheter but three times and had

* Read before the Malden Medical Society, Jan. 14, 1911.

[1] Jour. Am. Med. Asso., May 13, 1908.

but 2 oz. of residual urine. Both men were uncomfortable, and the man with the larger prostate was the more so, but the first had complete obstruction, while the man with the big prostate could still urinate and had but two or three night urines.

The number of men over forty who complain of frequent urination, night urination, difficult urination or albuminuria is very large and includes some who have no prostatic obstruction, but the important thing is that it *does* include all those who do have prostatic obstruction in the early stage. There must be many such now under treatment or neglect with a diagnosis of cystitis, pyelitis, pyelonephritis and even Bright's disease who are suffering from prostatic obstruction. A simple catheter is usually enough to settle the diagnosis. If the catheter will not go in with ease there may be some other form of obstruction which will keep the urine from flowing out, but if the catheter passes easily and residual urine is found, the diagnosis of prostatic obstruction is made.

Should we operate on these early cases? If we can relieve the obstruction by massage, sounds, dilators, the answer is, No. So long as a man can empty his bladder there is no good reason for removing an organ which may trouble him later but does not now. If the measures suggested are not successful, there is still opportunity for a difference of opinion. To me the fact that there is residual urine proves that the bladder is working harder than it was intended to, and the compensatory thickening of the bladder wall is a warning of a contracted bladder to come later. Operating through a thick bladder wall is less easy than through the normal, but that is a small matter beside the fact that a contracted bladder is exceedingly slow to resume normal capacity after a removal of the obstruction. The disappointing operative results are found among the patients whose bladders will hold but two or three ounces before they have been operated. They continue to have night urination and daily frequency for a long time after they leave our hands.

The comparative risk of operating on men with clean bladders and septic trabeculated bladders is to be considered as well as the chance of ascending and general infections. Personally I do not think the increasing age of the patient is of great consequence except as these progressive results of obstruction appear.

My youngest patient was forty-six, and I was able to sew up the bladder and send him home at the end of ten days with a tight bladder. I have not felt justified in trying it with my others, all of whom have been above sixty with one exception, but the contrast between the rapid convalescence of this patient and that of the patients with infected bladders was almost as great as that between patients with interval and drainage operations for appendix inflammations. I believe the time has come to advocate early operation, that is, operation as soon as prostatic obstruction can be demonstrated by the presence of constant residual urine, because there is present an anatomical condition which will by no possibility disappear and which will probably increase; because this condition will produce pathological changes in bladder, ureters and kidneys; because as a result of these changes general health will suffer, discomfort will increase and the period of usefulness be shortened; and because at this time the operation is less of a shock, practically without danger if properly done, and the convalescence is comfortable and short.

Recent statistics as to the frequency of malignant disease in hypertrophied prostates furnish another argument for early and complete removal.[1]

The second class of patients includes the majority of all who call for help. They have not begun to use a catheter and they are often ignorant of the condition which sends them to a physician. They are slowly going down hill, losing sleep, losing strength, growing old faster than their years warrant. Their urines are alkaline, contain a little albumen, often a few casts and white and red blood corpuscles. They rise two or more times at night to urinate and pass urine every two or three hours by day. Many of them think they have a "little kidney trouble" and have gone the rounds of physicians and proprietary remedies. It is unfortunately true that they can find a large number of physicians who will accept this ready-made diagnosis when confirmed by the albumen findings in the urine and who will try to work the miracle of curing them of a mechanical difficulty by pill and potion. For these patients we have but two alternatives; we can put them into the third class and let them use a catheter more or less frequently, or we can operate. There is no other alternative if they are to live with any comfort. The first alternative is often chosen from fear of death from the operation and sometimes from the knowledge of some one who has been operated and has incontinence or the need of using a catheter after the operation. For four years I have had the opportunity of watching the progress of such a case living under the most favorable conditions. He had a stone crushed and evacuated in 1901. Symptoms of obstruction appeared in 1904. In 1906 he had three ounces of residual urine, alkaline and cloudy. He rose every hour to urinate by night and was called to the same function every hour or hour and a half by day. After a few weeks of treatment his residual dropped to one ounce and his nights were disturbed but two or three times. Gradually the residual increased to four and five ounces and his night urines to three and four in spite of the best non-operative treatment that I could give him. He has been comfortable all the time except on one occasion when his plans were interrupted by another physician who was alarmed at the amount of pus in the urine and sent him home from a vacation trip. The case

[1] Cohn: Deut. med. Wochenschr., Berlin, April 1, 1909. Young: Ann. Surg., January, 1910.

has taught me much that can be done for the patients who utterly refuse to consider any operative procedure. I did not suppose they could be kept as comfortable for so long a time. On the other hand, this man is now seventy-nine and the chance he once had of a comfortable convalescence and a prompt recovery is growing more remote, and he requires the constant attendance of a nurse.

For a man who can have every comfort and care, the problem is different from the one whose care is fitful and not of the best. Such a patient is likely to suffer much and die within a year or two unless he can be taught to use a catheter cleanly and regularly or have unusual powers of resistance. One of my patients who had frequent attacks of cystitis in spite of much washing of hands and boiling of catheters used to mourn his hard luck when he had a neighbor who carried his catheter in his hat band and lubricated it with saliva with no unpleasant results.

Even the man who is most comfortably situated is better off with a bladder that empties itself than he can be with the most minute care possible.

One of my first patients had depended on a catheter for six years, during which time he had been operated for hemorrhoids and had perineal section for stone. After the enucleation he was two months in recovering perfect control of his sphincter, which had not been exercised during his catheter life. The change in his general condition and his delight in nights of undisturbed sleep were as striking as his regret that the prostatectomy was not done earlier.

I believe in operating on prostates with cystitis because the operation will cure the cystitis and guarantee against a return; because, with relief from the discomfort and opportunity to get their sleep, they will gain in general health and usefulness; and because it allows proper drainage of the ureter into a clean bladder instead of keeping its orifice submerged in a pool of purulent urine.

I do not see room for a difference of opinion about the desirability of operating on these cases. The danger and discomfort of the operation is less than the danger and discomfort of going without, and the successful removal of a benign hypertrophy promises absolute and permanent comfort so far as the bladder is concerned.

The third group will include all who use a catheter one or more times daily. If they are entirely comfortable using a catheter four or six times in twenty-four hours they may safely be allowed to continue if they prefer it, but they should have the option of the operation and freedom from such annoyance. Such cases are ideal for operation because of their proved resistance to infection, their toleration of urethral instruments, their normal bladder capacity and the probability of a definite, easily removed obstruction. Just as soon as the frequency of catheterization begins to increase there is proof of beginning infection, and unless a short course of antiseptic washing restores the normal intervals, operation should be prompt. They go from bad to worse more rapidly than any of the others here described, and the risk of the operation increases just as fast until a point is reached where the prostatectomy must be preceded by a long drainage period to be safe.

I believe in operating on both classes of catheter patients — those who are comfortable because of the slight risk and the guarantee against future trouble offered by the successful operation, and those with painful cystitis because there is nothing else to do to save life and comfort for their remaining days.

### THE METHOD.

Castration and the cautery knife are now historical. The literature of to-day refers only to the perineal and suprapubic operations.

Of the former there are two variations, the urethral and the transcapsular, and in operating by the suprapubic route some prefer removal in one or at most two portions, while others enucleate as happens to be most easy.

Anatomically almost all hypertrophies of the prostate are in part at least intravesical. This may be denied by some whose knowledge is limited to cystoscopic views and perineal operating, but I am positive of its truth from the cases I have operated, from autopsy specimens, from the lengthening of the urethra in most cases and from the fact that the mucous menbrane and internal sphincter of the bladder offer less resistance to upgrowth than is found in any other direction. There is probably no hypertrophied prostate which cannot be removed through a perineal incision, but no large one can be dragged out through the urethra without injury to ejaculatory ducts or sphincter unless in small pieces, and the same must be in less degree true of the transcapsular operation.

If twenty per cent of hypertrophied prostates are in some degree cancerous, the objection to morcellation is evident. If the wound be left entirely open, or a large tube be left from the bladder to the dressing, an ideal drainage is provided, but the importance of this may be overestimated. In gross, recovery from operations through the perineum has been a little better than from the suprapubic operation, but as Dr. Chase and I have before pointed out, there is a much greater difference in mortality reported among men doing the same operation than there is between the gross statistics of the two operations, and these gross statistics are coming nearer together each year. It is generally admitted that the late results of the suprapubic operation are more satisfactory.

The reported higher mortality of the suprapubic operation is really the only argument against its adoption as the general rule, with the perineal operation for occasional use. The preference of men already experienced, in other perineal operating, for perineal prostatectomy may partly account for a difference in results. Another explanation has occurred to me. The tables previously referred to show an admitted mortality due to "shock and hemorrhage" nearly three times as large in the suprapubic as in the perineal

results. Most of these cases really mean hemorrhage, and the source of the hemorrhage becomes important. It is mostly venous and the veins are most numerous where the hypertrophied prostate is in contact with the internal sphincter.

In urethral perineal prostatectomy the separation is downward, the finger is hooked over the top and the masses are dragged out. The same result is accomplished by the retractor and traction forceps in the transcapsular operation. In doing a suprapubic enucleation the natural movement is to use the same hooked finger before the prostate has been fully separated from its upper attachments all around. Doing this, one is likely to peel up a strip of the bladder wall itself and open into the rich plexus of veins. I have seen strips of mucous membrane and even portions of a seminal vesicle in the material removed by premature "hooking."

A suprapubic enucleation should be done with a straight finger until the hypertrophied gland is entirely separated from *all* its lateral attachments. I cannot help thinking that the enucleation downwards which is a feature of the perineal work has been one of the reasons for its better operative record, especially in the matter of "shock and hemorrhage."

I have had one death two days after operation on a cardiac case whose removed and remaining tissue showed extensive carcinoma, and no other mortality in the seven years Dr. Chase and I have been doing suprapubic prostatectomies. We have had no case of incontinence, injury to rectum or peritoneum. We have had one case showing infection of the prevesical space, five cases of epididymitis, and one patient who has developed cancer and resumed the use of his catheter four years after operation.

One case took forty-three days to close his suprapubic bladder wound, another twenty-seven days, and one was sewed up tight at time of operation. The rest have been tight in from fourteen to twenty-one days. The flexible metal catheter as perfected by Dr. Chase is an improvement over the gum elastic tube previously used, because it will not kink, rarely stops up, empties into a urinal without any extra piping, and gives all the "drainage" necessary.

We use no suprapubic tube and many of our patients keep their dressings practically dry after the first twenty-four hours.

The statistical difference in fatal results between the high and low methods of approach is steadily growing less. Either method well carried out if preceded and followed by minute and unsparing care will have a low mortality. Carelessness in technic or average after-care will send the mortality up with either operation. A prostatectomy is not a completed piece of work when the surgeon has washed his hands. The results of a perfect operation may be lost or a less perfect operation turned into a success by careful preparation of the patient for the ordeal and equally careful watch for and prompt action on danger signals after the operation.

I believe in the suprapubic prostatectomy because we are dealing with a tumor which is partially intravesical at least; because even the largest prostates can be removed entire or in two pieces without injury to rectum, sphincter or ejaculatory ducts; because recent studies of hypertrophied prostates show cancer formation to be comparatively frequent and morcellation, therefore, undesirable; because the slight excess of mortality does not seem necessary if enucleation be downward and the after-care correct; and because it has given results satisfactory to my patients and to me.

## SOME OF THE MEDICAL PROBLEMS OF ALCOHOLISM.*

BY IRWIN H. NEFF, M.D., FOXBOROUGH, MASS.

THE world-wide prominence given to the problems of drunkenness, the universal interest shown in the varied aspects of alcoholism, and the belief that the medical profession should take an active and leading part in a publicity campaign are my reasons for reintroducing a subject which to many may appear to have been worn threadbare.

From a sociological point of view the problems of drunkenness have received thorough and praiseworthy attention. It may be said that some of the viewpoints from a medical standpoint are lacking in scientific proof and have been too readily accepted. Thus it may be instanced that the relation of poverty to drunkenness, or the dependence of alcoholism on heredity, have never been accurately determined. These omissions have served to strengthen rather than to retard interest, and have not seemed to seriously handicap their work. They seem to have appreciated the magnitude of the task, and have gradually accumulated certain facts which have furnished them with admirable working capital.

My association with these people and with court officials has shown that they are anxiously awaiting more light on the medical aspects of the subject. They keenly appreciate that without the aid of the medical profession drunkenness must remain an unsolved problem. It would appear that they have no intention of usurping authority, but are forced by necessity to make the best of the material which they have on hand.

Drunkenness is a condition resulting from alcoholism, and inebriety is an expression of alcoholism. While the social and judicial problems would seem to outweigh the immediate medical considerations, I do not hesitate to say that the medical profession is expected to take a leading part in any plan which is inaugurated for the prevention or amelioration of inebriety. Physicians should accept this obligation and discharge it to the best of their ability; it rightly belongs to medicine, as it is first of all a remedial measure, and, secondly, educational along the lines of preventive medicine.

Judges, members of the courts and those interested in the care and cure of the inebriate have recently advised that a public campaign of edu-

* Read at the October, 1910, meeting of the Boston Society of Psychiatry and Neurology.

cation be inaugurated. Such a campaign has already been suggested for this state.

Physicians have championed the war against tuberculosis, and as a result they have not only added to their store of therapeutic knowledge, but have taught the public a lesson in economics. It has proven to the victim of tuberculosis that his disease is not incurable, and it has also taken away from the charlatan in part a means of livelihood. A glance at the advertised nostrums in our papers and periodicals will show that there is a perceptible and progressive decrease in the number of "consumption cures." This improvement is more evident if we contrast it with the numerous advertised cures for drunkenness. It would seem as if the quack, deprived of one source of revenue, had emphasized more strongly another phase of his character or versatility.

Apparently there is a general awakening of the medical profession to the realization of the need of concerted action to decide these problems, but to be successful we must proceed along definite lines and be absolutely sure of our premises. We have many problems to solve which require experimental, clinical and pathological research. A public educational campaign can only be successfully regulated by the medical profession. It would appear that such a campaign conducted on conservative lines would be of immense importance and of permanent value.

The study of a condition or a disease must necessarily begin by studying the environment or the individual responsible for the state or disturbance. Inebriety is no exception to this rule. The study of the inebriate must be the foundation stone for our medical analysis and for any suggestions for the control of drunkenness which we may make to the public.

It has always seemed to me that much of the misunderstanding about inebriety can be traced to our misconception of the word "inebriate." An inebriate is an habitual drinker. All cases of drunkenness are not cases of inebriety, but all confirmed or habitual drinkers are properly classed as inebriates. Inebriety has been called a disease; this has been vigorously opposed by those who would have us consider it a habit requiring only correctional measures for its control. The adherents of the habit theory have contended that the diseased conditions, whether mental or physical, are due to confirmed alcoholic indulgence. Again, it is maintained by some of those who are willing tentatively to consider inebriety as a disease that a general acceptance of this conception would serve to handicap any plan proposed for the suppression of drunkenness, as it might eventually lead to public belief that the inebriate is irresponsible. It is thus evident that the word "pathologic" as applied to inebriety should be used with caution and only after concise differentiation.

I have before contended that inebriety is a condition of nervous weakness on which is engrafted a habit. This conception of the conditions seems to me to qualify the assertion that inebriety is a disease. While calling it a "disease" we do not by accepting such a definition imply that the inebriate is irresponsible.

During the past two years we have studied the personality of our patients prior to the onset of the alcoholic syndrome, and while we are not as yet prepared to make a bald statement, we can say that in quite a considerable percentage of the cases a pathological nervous condition antedated the onset of the inebriety. When analyzing these nervous symptoms we have frequently encountered eccentricities, peculiarities, neuropathic and psychopathic conditions. In some cases distinct entities, as neurasthenia, hysteria and psychoses, could be differentiated. In other cases the conditions were more chaotic and did not admit of a differential diagnosis. It would, therefore, seem as if the word "pathologic" as applied to inebriety was admissable, but with our present state of knowledge its use should be restricted to those cases where the nervous or psychical conditions developed prior to the onset of the alcoholic syndrome.

There are some factors associated with the mental and physical condition of the chronic alcoholic or inebriate which are not generally understood. A reference to textbooks on psychiatry will give us a concise description of the mental and physical stigmata of alcoholism; the pathological findings are accurately described and it would seem as if the final word had been said. Recent studies in alcoholism and related diseases would seem to throw doubt on these textbook descriptions. It is quite necessary to make a sharp distinction between the effects of alcohol itself and the effects of certain other factors which also are usually present in the life of the alcoholic. There are very few diseases which are wholly due to alcohol; one of them is a form of peripheral neuritis, and, of course, chronic alcoholism is the sole cause of delirium tremens. "Alcohol is the chief cause of the common form of cirrhosis of the liver, and yet equally serious forms of cirrhosis of the liver are not the result of alcoholism. These three conditions are the diseases for which alcohol is chiefly and directly responsible. In the causation of many other diseases for which alcohol is commonly blamed, it does play an exceedingly important rôle, but this rôle is a hidden one." [1]

In our hospital practice we have recently encountered what appears to be a rather unusual form of alcoholic toxemia. Some of these cases have terminated fatally. The syndrome is an unusual one, and we have not as yet made a concise or satisfactory diagnosis. Some unsolved problems of alcoholism in addition to these mentioned are: First, the need of a more extended inquiry into the character and cause of delirium tremens; second, the exact relation of arteriosclerosis to alcoholism; thirdly, the frequency and character of organic physical disease in confirmed cases of alcoholism; and, fourthly, the exact relation of alcohol to insanity. These and many kindred subjects are before the medical profession for decision.

[1] Emerson, Charles P.: "Alcoholism and Disease." The Survey, Oct. 1, 1910.

A factor which is deserving of more than passing notice, and which is of extreme clinical value, is the general opinion that the inebriate is irreformable or does not lend himself readily to curative measures. The general belief is that an inebriate is untruthful, selfish and unwilling to assist in carrying out any plan which might lead to his betterment, and, moreover, this aggressiveness on his part is supposed to preclude any hope of permanent improvement. My experience would show that in many cases this is an exaggeration of facts. While it may be true that the irreclaimable inebriate, owing to loss of self-respect, is lacking in true insight, a considerable number of these cases are frank, appreciative and generally interested in measures put forward for their good. Their inability to carry out their good resolutions or to overcome their weakness must be considered as one of the expressions of their defectivity. It is a physiological fact that the most important result of alcoholism is a reduction in the vitality and resistance of the body. On the physical side this is shown by susceptibility to disease; on the mental side there is a decided loss in strength of the will. The individual study of the inebriate helps us to recognize many of our inconsistencies and is aiding us in correcting our errors. We must appreciate that the personality of the inebriate is an individual personality and cannot be expressed by a composite description.

There is no drug treatment of any value for inebriety. Drugs at their best are of secondary importance; it cannot be denied that a small number of inebriates have shown marked improvement after treatment by one of the so-called cures. I have personally investigated this phase of the subject and find that any improvement resulting from such treatment may be credited, first, to change of environment, and, second, to the memory of a natural disgust at the use of the drug employed. It may be said that this is a crude form of suggestive therapeutics and permissible if it improves a condition which is resistive to ordinary therapeutic measures. Such methods of treatment, however, should be condemned as they are unscientific and lacking in permanency of benefit. The methods of cure at the State Hospital in Massachusetts and hospitals for inebriates in this country and abroad are quite similar. We rely largely upon the building effects of pure air, good food, abstinence from alcohol or drugs, regular hours and out-of-door skilled labor, but this program is not in itself sufficient to cure the pathologic inebriate. The chief methods of cure of habitual inebriety, as in many other nervous affections, such as neurasthenia, etc., lie in arousing the patient's co-operation in his own recovery by educating the will. The inebriate, strengthened in body by a change of environment and out-of-door work, is also trained in mind to resist alcohol; his constructive interests are aroused, — if necessary, a skilled trade is taught; education is encouraged by libraries, lectures and discussions; the patient is prepared in both mind and will to meet and overcome the difficulties which he must necessarily re-encounter when he again leaves the hospital.

Those who are familiar with the types of inebriety have recognized that apart from the hopeful case there is a class of inebriates resistive to any curative measures. These can be properly termed custodial cases. Such cases comprise the "repeaters," and the prison population is made up largely of these defectives. Physicians in charge of the penal institutions of this state to which drunkards are sent assert that the large majority of habitual drunkards in their care are men of less than normal mentality. Whether this be cause or effect, it cannot be denied that the need of properly taking care of these persons is certainly as great as that of caring for the insane.

The advisability of committing inebriate patients to an institution has been questioned. It is claimed that institutional treatment is often a decided detriment. It is believed by those who oppose such treatment that institutions are harmful as they foster in the patient a feeling of dependence on the hospital and fail to develop in the patient a feeling of self-responsibility. To the question whether it is advisable to recommend institutional treatment for all cases, I would say that in the majority of cases the educational or re-educational measures, the basis of our treatment, can best be inaugurated at the hospital. The continuation of this treatment can be carried on away from the hospital under medical supervision and direction. It appears to me that no general rule can be given. In some cases it cannot be denied that hospital treatment without proper conditions would be detrimental to the interests of the patient.

In order to attain success in any plan which contemplates the relief to the inebriate it is imperative that there should be a keen and concise differentiation. Unless this is recognized, our purposes will often be defeated. Individual treatment is the only method of treatment which is of any avail. Those who fail to recognize that each inebriate is an individual case, each case requiring individual consideration, will often fail to benefit the patient.

I quote the following pertinent paragraph from a popular magazine article: "Rescue mission workers, priests and clergymen hold a record for genuine cures of alcoholism of which physicians may well be envious. They direct their attention to the man's person and spiritual life, paying particular attention to his environment. The will is alcohol's chief point of attack, and there must the main defense be made. The man realizes the need of a strength not his own, and with this he often wins."

I have purposely left until the last the most important question, namely, a consideration of the after-care for the patient. The following paragraph explanatory of our present methods is taken from the special report of the Board of Trustees of the Foxborough State Hospital submitted to the last General Court:

"Mere training of the patient is in itself an inadequate provision, when the man is forced to

return immediately upon discharge from the hospital to an unsanitary home, to evil associates, domestic troubles and casual labor. In Great Britain the Inebriates Reformation and After-Care Association has been formed to meet the inebriate when he leaves the hospital, and find him work and proper associates. The British association, however, is at a disadvantage in that its officers know nothing of the patient previous to his discharge from the hospital, and also are not equipped to continue the medical treatment of the patient, or even to win his confidence. At the Foxborough State Hospital an attempt has recently been made to improve upon the British mode of after-care by employing a physician, familiar with the methods of the hospital and acquainted with its patients at the hospital, to conduct this work. Through the out-patient physician the treatment of the patient is supplemented by instruction to the patient's family in the nature of the disease of inebriety and the methods of aiding its cure. Total abstinence is urged within the family. The patient is further linked with constructive social interests, — the church, sympathetic friends, temperance fraternities, and the like. The man is helped to secure employment through the employment agency of the hospital. Men who have been casual laborers before their treatment, and have been taught a skilled trade at the hospital, are placed by its officers at that trade. Most important, however, is the visit paid by the out-patient physician of the state hospital to the ex-patient, by means of which the treatment which was practiced at the hospital is continued. If the physician concludes that the patient has left prematurely, he is advised to return to the hospital; if he appears safe at his home, he is aided with frequent counsel and encouragement. Contact is also kept up through visits to the hospital by the patient. Reports are required both from the patient and from his family. In this manner the psychological treatment begun at the hospital is continued and supplemented by the sociological measures of the out-patient physician, and the patient, trained in strength of will in the hospital, is equipped with an environment favorable to the exercise of his strengthened volition."

The after-care department of the hospital as above outlined has been in successful operation during the past year. The results have been eminently satisfactory. Our confidence in this new departure of the hospital can best be expressed by declaring it our purpose to make its development an important part of our hospital work during the coming year. The Commonwealth of Massachusetts has obligated herself to carry out the recommendations incorporated in the special report before mentioned. An abstract of these recommendations is as follows: The immediate purchase by the commonwealth of a large tract of land for the establishment under uniform medical supervision of a new hospital for men, a women's hospital and the gradual development of a detention farm colony. The hospital for men to receive: First, patients who come voluntarily or who are committed by the courts; second, young habitual drunkards placed on probation by the court on condition that they spend a specified period at the hospital; third, suitable cases which may have been transferred on parole from the detention colony. The hospital for women to receive: First, patients who come voluntarily or who are committed upon application; second, cases placed on probation by the court on condition that they spend a specified period at the hospital. The detention colony to receive non-criminal habitual drunkards from the criminal courts on indeterminate sentence.

It seems unnecessary for me to say that the inauguration of such a plan and its complete success depends largely upon the co-operation of the medical profession with state officials.

## Clinical Department.

### CASE OF FOREIGN BODY IN THE TRACHEA. STATUS LYMPHATICUS. DEATH. AUTOPSY.*

BY J. PAYSON CLARK, M.D.,
*Physician for Diseases of the Throat, Massachusetts General Hospital; Instructor in Laryngology, Harvard Medical School;*
AND
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*Assistant Pathologist, Massachusetts General Hospital.*

THE patient, a white boy aged sixteen months, inhaled a hulled peanut kernel on Sunday afternoon, Aug. 21, 1910. His parents, who lived in a town in Connecticut, said that they had taken him to several hospitals, but could get nothing done for his relief. They brought him to the Massachusetts General Hospital on Tuesday evening, Aug. 23, two days after the accident. I saw him that evening. The temperature was 100½ (rectal), pulse 158, respiration 40. His mother said he had eaten nothing since the accident, and, having traveled a long distance, he was much exhausted. During the physical examination he lay listless and apparently indifferent to his surroundings, although one could not say he was unconscious. Two radiographs were taken, which gave no indication of the foreign body or of the enlarged thymus. Although the respiration was rapid and noisy there seemed to be little if any obstruction to the entrance of air into the lungs, and there was no cyanosis. In view of the exhaustion and of absence of any indication of the necessity for immediate interference, it was deemed best to wait until morning, when the external conditions would be more favorable for operative interference. The patient had rather a restless night, but slept some with a narcotic. In the morning (Wednesday, Aug. 24) the rectal temperature was 100, pulse 140, respiration 30. There was the same semiconscious state as on the night before, the eyes more or less fixed, the eyelids half closed, the body relaxed. Ether was given very carefully and in small amount. The child was placed in the Rose position, and with a small Jackson tube spatula an excellent view obtained of the glottis. Something could be seen moving up and down the trachea on expiration and inspiration. The glottis was sprayed with a little 1% cocaine solution and a small pair of tube forceps introduced into the trachea then opened. As the patient expired, the forceps were closed. It was at once evident that they had closed on some-

* Read at a meeting of the New England Otological and Laryngological Society, Nov. 28, 1910.

thing which required considerable traction to pull through the glottis. When the forceps was removed the blades held nearly a whole peanut kernel, which separated into three or four pieces as it was released. The kernel had probably broken in the forceps, as it is most unlikely that if it had been in pieces in the trachea it should all have been removed with one grasp of the forceps. After the operation, which took hardly more than five minutes, the pulse at the wrist was almost imperceptible, the respirations were feeble and the patient looked badly, pale but not cyanotic. It was evident that the child was in very bad shape and that something must be done; so, at the suggestion of one of my colleagues that there might be still more particles of peanut in the air-passages, I performed tracheotomy. The child stopped breathing during the operation, which was rapidly completed. On inserting the tube another small piece of peanut was expelled. Artificial respiration started the breathing again. An enema of warm salt solution with brandy and a hypodermic of strychnia were given and hot water bottles were put in the bed. He now breathed in a peculiar



Thymus. Status Lymphaticus. Massachusetts General Hospital. a. Right border of enlarged thymus. b. Left border. c. Lower border. Photograph by L. S. Brown.

manner, deep inspirations alternating with periods when the respirations seemed to have ceased. There was no obstruction to respiration. The pulse at the wrist was very faint and rapid. While we were watching him, he suddenly had a violent convulsion, clenching of the fists, flexion of the hands at the wrists, opisthotonos and twitching of the muscles of the face. This seizure lasted not more than a minute. As soon as it was over he was taken to the ward. He had not been there more than twenty minutes when the nurse reported that he was dead. I went at once to the ward and found that this was the case, also that, although the body was still warm, rigor mortis was already present.

AUTOPSY.

The permission of the parents having been obtained, an autopsy was made by Dr. Richardson on Aug. 25, eighteen and one-quarter hours post-mortem.

*Anatomical diagnosis.* — (A portion of a peanut was successfully removed from the trachea in this case, but was followed shortly by death.) Tracheotomy wound. Status lymphaticus. Meckel's diverticulum.

A male child sixteen months of age, 82½ cm. long, very well-developed and nourished. Race: American. Head: Not examined. Trunk: The neck presents a tracheotomy wound in the usual situation. It is in good condition. On section subcutaneous fat in good amount; muscles not remarkable; peritoneal cavity free from fluid; peritoneum smooth and shining; appendix not remarkable. The anterior margin of the right lobe of the liver is one finger breadth below the costal border in the right mammary line. Diaphragm, right side, fourth interspace; left side, fifth rib. Pleural cavities free from fluid. Lungs free. The thymus gland is present and greatly enlarged. It is roughly in the shape of a much flattened pyramid and reaches from a point a little below the lower border of the operation wound in the trachea down over the heart to the diaphragm. It measures 11½ cm. in greatest length by 6 cm. in greatest width by 2 cm. in greatest thickness. The broadest portion of the gland rests over the heart. The narrowest and thickest portion rests over the trachea. The gland is rather firm and meaty and its lower peripheral portions thin out to an edge. As the specimen is preserved, the weight cannot be taken. The bronchial and tracheal lymph glands show some enlargement, but otherwise are not remarkable. The trachea and bronchi are free. The lungs are not remarkable. Pericardium not remarkable. Heart weighs 53 gm. On section the cavities of the right side are engorged with blood and there is a rather considerable amount in the cavities of the left side. The organ otherwise is not remarkable, except that it is rather large. Aorta and its great branches and the venæ cavæ not remarkable. Liver weighs 351 gm. Not remarkable. Gall bladder, no stones. Bile ducts free. Pancreas not remarkable; duct of Wirsung free. Spleen weighs 40 gm. On section the tissue is firm, dark red in color, with very prominent follicles. Adrenals: Not remarkable. Kidneys: Combined weight, 74 gm. Capsules strip, leaving smooth surfaces. On section the tissue is of good consistence, the markings are retained and the cortex measures 4 mm. The section surfaces are rather pale; pelves not remarkable. Ureters free. Bladder, prostate and testes are not remarkable. Esophagus and stomach are not remarkable. The small intestine on section shows very prominent Pyers patches and follicles with some reddening of these in places. The lower part of the ileum presents a typical Meckel's diverticulum about 5 cm. long and of the same caliber as the intestines. The lumen of the diverticulum communicates freely with that of the ileum, and the mucosa is not remarkable. The large intestine on section shows prominent follicles with some reddening of them in places. The mesenteric and retroperitoneal lymph glands are more or less enlarged and pale. On section the tissue is not remarkable. The larger glands measure at least 2 cm. in greatest dimension. Bacteriological report: Culture on blood serum. Spleen. No growth.

In the analysis of this case interesting questions arise upon which one may speculate with possibly some profit even if no definite answers can be arrived at. Would it have been possible to diagnosticate this case *intra vitam?* Let us see what were the features present which are characteristic of status lymphaticus. Plumpness and a general rotundity of the limbs, a characteristic of these cases, was present, alone a very inadequate basis for diagnosis. There was no noticeable enlargement of the external lymphatic glands.

If the tonsils had been much enlarged they would have probably been noticed on passing the tube spatula, but no special note was made of the condition of the tonsils. The noisy respiration made percussion and auscultation very difficult and unsatisfactory, but even had it been otherwise, the site of the enlarged thymus over the heart and great vessels would have masked the greater part if not all the dullness caused by its enlargement. The same difficulty applies to the interpretation of the radiograph. The foreign body moving up and down in the trachea with respiration, if anything, only increased the shadow normally caused by the trachea. No one who saw the plates suggested that the shadow caused by the heart and great vessels was any larger than it should have been. Looking back at the case, the state of shock which was present when the patient was brought to the hospital was greater than one would expect after such an accident, merely from the irritation of a foreign body in the trachea and with little or no obstruction to the passage of air into the lungs. But this condition was attributed at the time to the excitement and exhaustion of the period following the accident. Dr. G. H. Cocks, in an article in the *Laryngoscope* for July, 1910, entitled "Status Thymo-Lymphaticus and its Relation to Sudden Death," says: "A finding of a lymphocytosis or diminution in the hemoglobin in the blood would aid in the diagnosis." But this diagnostic sign is of no value unless a blood examination is made a routine procedure before operation, which has not heretofore been our custom or been thought of as essential. If the diagnosis had been made before the operation, could any other possible method of procedure have prevented the fatal issue? It was quite evident that the patient's condition would not improve while the foreign body remained in the trachea. Its removal might have been attempted under local anesthesia, although this procedure is not free from danger in status lymphaticus. Dr. Cocks finds records of three fatal cases after local anesthesia. It should be remembered that under local anesthesia in this case we should have had the mental shock to the semiconscious child of the manipulation and instrumentation necessary for the removal of the foreign body. I question very much if the outcome would have been different. There was no evidence in this case of any mechanical compression of the trachea by the enlarged thymus. Death was apparently due to hyperthymization. In other words, death was due to a toxemia affecting the nerve centers and not to a mechanical obstruction to respiration although the mechanical effect on the heart of the enlarged thymus spread over it should be thought of as exerting a possible delaterious influence.

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Increase of Cancer in Ontario. — During the seven years up to and including 1908, 8,769 persons of all ages died in Ontario from various forms of cancer. In 1902 the number was 1,048; 1903, 1,156; 1904, 1,253; 1905, 1,224; 1906, 1,411; 1907, 1,329, and 1908, 1,348. — *Jour. Am. Med. Asso.*

## REPORT OF THREE RECENT CASES OF BRONCHOSCOPY FOR FOREIGN BODIES.*

BY D. CROSBY GREENE, JR., M.D.,

*Surgeon to the Throat Department, Boston Children's Hospital; Assistant Physician to Out-Patients with Diseases of the Throat, Massachusetts General Hospital.*

The first case, a boy two and one-quarter years of age, was admitted to the Children's Hospital, in the service of Dr. J. L. Morse, Feb. 18, 1910. Four days before, while eating dried figs, he suddenly began to cough and choke. The following morning he coughed up a piece of fig, and the next day began to be feverish. Spells of coughing and choking continued at intervals. Physical examination made at the time of admission showed evident dyspnea; the left side of the chest moved less than the right in respiration; the breath sounds were diminished in intensity on the left side and entirely absent in the left back between the mid-axillary line and the left edge of the scapula. There was no dullness on percussion of the left chest. Auscultation and percussion of the right chest showed normal breathing throughout. The temperature was 103°, and the pulse 140 and the respirations 54. The history and the physical signs pointed to obstruction of the left bronchus by a piece of fig. An x-ray examination by Dr. A. W. George on the morning after the child's entrance to the hospital did not show any foreign body. Dr. Morse then referred the case to me for bronchoscopic examination.

The child was etherized and I introduced the smallest sized bronchoscope we had through the larynx into the trachea to the bifurcation. The right primary bronchus was clear, but the left was plainly obstructed. The mucous membrane was much reddened and swollen and the lumen thus narrowed was closed by a whitish plug. I was unable to introduce the bronchoscope into the bronchus and after a few ineffectual attempts to clear the bronchus with forceps I desisted for the time, hoping that my manipulations might have loosened the foreign body in its macerated condition sufficiently to enable the child to cough it out.

The child made a good recovery from the etherization, but the signs in the chest remained essentially the same. Evidently no air was going into the left lung. After a week, during which the child had a typical septic temperature, I made a second bronchoscopic examination. The appearance of the left bronchus was the same as at the first examination. This time I introduced a blunt hook into the bronchus a short distance beyond the apparent point of obstruction and withdrew it after making a slight turn. There was a little resistance to the withdrawal of the hook, but no foreign body could be made out and the bleeding which followed obscured the field of vision. Palpation and auscultation of the chest at this time showed that air was now freely entering the left lung. The child again made a good recovery from the ether, but his general condition did not improve, but grew steadily worse. A double purulent otitis media requiring paracentesis of both drumheads followed, and later definite signs of an abscess of the left lung. This was opened and drained through the chest walls by Dr. J. S. Stone, but the child survived the operation for only four days. Autopsy was not allowed.

It may be inferred, I think, that at the time of the second bronchoscopy the fig had become considerably macerated and was broken up and scattered into the lower bronchi by the manipulations. Whether the latter had anything to do

* Read at a meeting of the New England Otological and Laryngological Society, Nov. 28, 1910.

with the formation of the abscess is questionable. It is certain that conditions favorable to abscess formation were present before bronchoscopy was done.

I was handicapped in the use of the bronchoscope in this case in two ways. In the first place, it was just too large to be introduced into the inflamed bronchus, having a diameter of about 8 mm. In the second place, it lacked a sufficient number of fenestra at its lower end, so that when introduced into the opening of the obstructed bronchus it shut off the passage of air through the other. No air could then enter either bronchus. To obviate these difficulties I have had a special small tube made for use in young children, 6½ mm. in diameter, provided with several fenestra near its lower end. This tube I had occasion to use a few months later at the Massachusetts General Hospital on the second case.

A child one and one-half years old had swallowed a pin one week before being admitted. The x-ray plate taken on the day of admission indicated its location in



Diagram of situation in Case II. In the attempt to extract the pin by upper bronchoscopy, the point of the pin was passed through one of the fenestræ and became fixed in the wall of the bronchus.

the left primary bronchus with the head down. On the following day, under ether anesthesia, I introduced the new tube into the left bronchus, located the pin and passed the bronchoscope over the point so that the latter projected a short distance into the tube. I then seized the pin with the forceps and withdrew it a short distance, perhaps one inch, but at that point met with an obstruction. Finding it impossible to pull the forceps and pin out by moderate traction, I released the pin, drew out the forceps and looked again into the tube. The head of the pin was probably over the light for the illumination was dim and I could not distinguish the pin. I then decided to give up trying to get the pin out by upper bronchoscopy and attempted to take out the bronchoscope, but the bronchoscope would not come out either. It was evident that the point of the pin had gone through one of the fenestra and penetrated the wall of the bronchus, thus securely fastening the bronchoscope. Various maneuvers to dislodge the pin were in vain until, at Dr. Mosher's suggestion, I tried revolving the tube. The situation was becoming desperate and, therefore, at the risk of severely lacerating the bronchus and neighboring vessels, I turned the tube around two or three times. The bronchoscope was released with a click and I withdrew it. I then opened the trachea and passed a short tube down to the pin, engaging its point as before in the opening of the tube. The child was in the Trendelenberg position and a slight cough was sufficient to expel the pin before I had a chance to take it out with forceps. This child had naturally a rather severe tracheitis and bronchitis following the operation, but made a good recovery and was discharged from the hospital in good condition on the tenth day.

The third case was one of bronchoscopy for diagnosis only. A girl eight years of age was sent into the Children's Hospital, service of Dr. Morse, Aug. 11, 1910. She had swallowed a dried butter bean two days before, and about six hours afterwards was seized with paroxysms of coughing, with dyspnea and cyanosis. The attending physician had recommended her for admission to the hospital with a diagnosis of probable foreign body in the air passages. After examining the case Dr. Morse made a diagnosis of right lobar pneumonia. The child was under observation in the ward for a week. At the end of this time Dr. Morse found no material change in the physical signs. There was dullness over the entire right base; the temperature was elevated and the respirations were increased. At intervals there were sharp paroxysmal attacks of cough, with some dyspnea. In view of the atypical course of the pneumonia and the fact that much less air was entering the right lung than the left, and in consideration of the somewhat doubtful history of foreign body, Dr. Morse advised bronchoscopy. On Aug. 17, one week after admission of the child, I performed bronchoscopy under ether. A very clear view was obtained of both primary bronchi, and the bronchoscope could be easily passed into both. No foreign body was present. The mucous membrane of the right bronchus was a little more reddened than the rest, and there was slightly more secretion of mucus on that side. The child, far from showing any ill-effects from the examination under ether, improved almost immediately. The paroxysms of cough ceased, the signs in the chest disappeared and she was discharged from the hospital five days later.

In conclusion, I wish to emphasize the following three points which seem to me to be demonstrated in reviewing these cases:

(1) In bronchoscopy for recovering a foreign body which plugs a bronchus, it is important to use a tube which is provided with many fenestra in its lower part.

(2) In bronchoscopy for recovering a long pointed object, such as a pin or a needle, the necessity for fenestra is not so great, and their presence may cause a dangerous complication to the operation.

(3) Bronchoscopy may be performed even in the presence of an acute inflammatory process in the lung without necessarily causing any ill effects.

## HEMORRHAGE AFTER TONSILLECTOMY.*

BY HARRY A. BARNES, M.D., BOSTON.

THE objection most frequently advanced by the advocates of tonsillotomy against tonsillectomy is the danger of hemorrhage following the more radical operation. While I by no means wish to assert that this danger does not exist, nor, indeed, to belittle in any way the chances of its occurrence, nevertheless, as there is in the minds of many men, particularly of the general practitioner, a certain misgiving in regard to this, I should like to add my testimony to that of others as to the comparative safety of the complete ablation of the tonsil.

I know that the amount of blood lost during a properly performed tonsillectomy is insignificant compared with the amount lost during the average tonsillotomy; and my experience leads me to believe that the chances of post-operative hemorrhage are at least no greater and probably not as great in the new as in the old operation. During the past two years, on the summer service at the Boston Dispensary, there have been performed four hundred tonsillectomies, done either by myself or by assistants directly under my supervision. In all these operations the technic was essentially the same. But one case of post-operative hemorrhage occurred, and this one case followed the use of a tonsil punch at the base, though the operator had the evidence of an intact capsule on the excised tonsil to assure him that its removal had been complete. The hemorrhage, which came from the surface on which the punch was used, was controlled by methods of which I shall speak later.

Whether or not a greater number of hemorrhages would have occurred in this series of cases if a different technic had been used, of course no one can say, but I am inclined to believe that, to a degree at least, the freedom from hemorrhage was due to the method employed in the operation.

Three places in the sinus tonsillaris are especially prone to bleed after tonsillectomy, viz., the anterior and posterior pillars at their lower halves and the base between the pillars. This latter place is perhaps the most usual bleeding point. I never have seen a serious hemorrhage occurring in the upper half of the tonsillar fossa. The reason for this is that the larger vessels from the surrounding tissues enter the tonsil in its lower segment. Obviously, if no sharp cutting instruments are used at these danger points, the chances of hemorrhage will be greatly reduced. The operation which I advocate avoids these absolutely, and is performed as follows:

The tonsil is grasped with a two-pronged tonsil forceps, the upper prongs entering the tonsil at the level of the floor of the supratonsillar fossa, and the lower prongs as near the base as possible. The prongs of this forceps are about a quarter of an inch apart, are long and slender, and instead of being bent at a right angle to the shaft form a slightly obtuse angle with it. They are easily forced deeply into the substance of the tonsil, where they engage the larger fibrous trabeculæ without macerating the more superficial friable tissue. Even in the adult tonsil these trabeculæ become much attenuated as they approach the surface, and there they offer little resistance to the pull of a tenaculum; deeper down they are much heavier and stronger. The security of the grip of the tenaculum is of the greatest importance, especially in those cases in which previous peritonsillitis has created a network of adhesions with the surrounding tissues. Under those circumstances the line of demarcation between the tonsil and the walls of the tonsillar fossa can at times only be discerned by moving the tonsil in various directions, and it is most embarrassing to find the tenaculum constantly pulling away during this procedure. This instrument seldom tears through even the soft tonsils of childhood.

The forceps inserted, the tonsil is pulled gently forward and inward, so that the plica is put upon the stretch and is backed up by the bulk of the tonsil. With a long, sharp pointed knife (a peritonsillar knife is excellent) an incision is made just outside the inner border of the plica from its base upward and backward to the point of juncture with the posterior pillar. (I use the word "plica" to designate both the plica triangularis and the plica supratonsillaris.) This incision is carried through the anterior fold of the plica only, and immediately the deep fibrous layer of the posterior fold is exposed. It opens up what may be regarded as a closed fibrous sac, the walls of which completely surround the tonsil except over its faucial surface, and the inner edge of which is the double fold of mucous membrane which forms the plica. The walls of this sac are but loosely adherent except at that point in the lower half where the larger vessels pass from the deep structures into the tonsil.

A blunt dissector is now introduced into the incision, and unless adhesions are present this space may be opened up easily and the whole upper and anterior part of the tonsil turned out of its bed in the sinus tonsillaris. Slight adhesions may be broken by a more vigorous use of the dissector, but if the adhesions are marked, it is better to divide them with a knife, as the too vigouous use of the dissector thoroughly bruises the tissues, and a very painful throat results. The posterior pillar is not touched.

The importance of a perfectly sharp knife in making the initial incision cannot be overaccentuated, for, if the knife edge be dull, all delicacy of touch is lost; the operator cuts too deeply in his efforts to cut at all, goes through both layers of the plica and into tonsillar substance and so gets outside of the peritonsillar sac, and a clean dissection of the tonsil becomes difficult if not impossible. This is the origin of many of the so-called adhesions of the tonsil.

The loop of a snare threaded with No. 7 wire is now slipped over the handle of the tenaculum and then pulled down to a size that the bulk of the tonsil will just about fill. No danger of

* Read at a meeting of the New England Otological and Laryngological Society, Nov. 28, 1910.

catching the uvula is then present. With gentle traction inward and forwards, the tonsil is pulled into the loop, the canula of the snare being above and thrust downward behind the tonsil as far as the dissection permits. The wire is then pulled as tight as may be, the patient's head thrown forward, and while the ether is applied for the other tonsil, the snare is slowly screwed home. This last step should be very deliberate as it is at this time that all the larger vessels of the tonsil are divided. I usually take from three to five minutes in affecting the separation.

The bleeding after this operation is almost always slight; often the sheet wrapped around the patient is unstained. Lest some believer in more radical surgery, who dissects out his tonsils, even to the base, with a sharp knife or scissors should maintain that the entire tonsil is not removed by this method, I will say that nothing is easier of proof than the success or failure of the operation according to this standard. If the removed tonsil shows an intact capsule, then the ablation has been complete; and in the vast majority of cases such an intact capsule may be demonstrated. Even when the lower part of the tonsil is missed, as it occasionally is, it is easily removed by a second application of the snare.

Concerning the posterior pillar: I never dissect it because I think the snare does this better than any other instrument can do it. I never have seen the integrity of the posterior pillar in the slightest degree affected by the wire.

Often after the removal of a tonsil by the snare, a small piece of tissue which looks like tonsillar tissue is seen at the base, even in cases in which we are sure that the whole tonsil has been removed. For a long time I was at a loss to know just what this tissue might be. The end of the lingual tonsil sometimes encroaches very closely upon the base of the faucial tonsil, and if hypertrophied may be mistaken for a part of the latter. But the tissue of which I speak lies higher up in the tonsillar fossa and is, I think, nothing but the fibrous tissue subjacent to the tonsil, which has been gathered up into a bunch by the action of the wire. It contains the larger tonsillar vessels, and it is to the endeavor to remove it with a punch that two of the post-operative hemorrhages I have had were due. It is a dangerous place to cut and should be let alone.

I do not claim for this operation an absolute freedom from the chances of post-operative hemorrhage, but I think it has a sound anatomical basis and reduces that chance to a minimum.

In dealing with post-operative tonsillar hemorrhage, three methods are available, short of tying the external carotid artery. Exigences requiring this later procedure must be extremely rare, for in the last two years, during which tonsillectomy has been the rule at the Massachusetts General Hospital, there has been no case in which it was even thought of. I will take up these methods in the order of their simplicity, and it is in that order that I think they should be tried in any given case.

*First*, simple pressure. The patient should be etherized in this as well as in the other two methods. It is useless to attempt to do anything without it if the bleeding is at all severe; the patient soon becomes panic stricken and is then unmanageable. The upright position with the head forward, so that the blood is not swallowed nor inhaled, but runs out of the mouth and into the ether cone, is essential. With the mouth gag in place, a curved sponge holder with a gauze sponge at the end of a size to fit snugly into the sinus tonsillaris is inserted between the pillars of the bleeding side and pressed strongly outward; at the same time counter-pressure with the fingers is applied just behind the angle of the jaw. The sponge on the inside may easily be grasped with the fingers on the outside, and thus a very effective compression is put upon all parts of the tissues of the tonsillar fossa. This pressure may be continued for from five to ten minutes. I have had two cases that were completely controlled in this way. If after ten minutes' pressure the bleeding is not stopped, no time should be lost in passing on to the second method.

*Second*, ligation of the bleeding point or points. I believe in most cases of bleeding after tonsillectomy, barring cases of hemophilia and provided that the tonsil has been completely removed and no undue injury has been done to the surrounding tissues, that the blood comes from some definite vessel or vessels and does not come from an oozing surface. I say this both because the surface of the tonsillar fossa is composed of a fibrous tissue which is not well supplied with capillaries, and because my own experience is in accord with this view. The case of bleeding mentioned above in the four hundred tonsillectomies at the Boston Dispensary and one case at the Massachusetts General Hospital were controlled by ligation of a single point. Both were at the base and in each instance a punch had been used at this point after the tonsil had been removed by the snare. Pressure should be applied as in the first method described, as in this way the exact bleeding point is more likely to be found. If this can be determined, it is grasped with an hemostat about one inch longer than the ordinary and with rather a heavy and broad end so that no great accuracy in its application is necessary, as quite a breadth of tissue is included in the bite. As it is extremely difficult to tie this off after the usual manner, a suture is passed through the tissue with a sharp aneurysm needle, first from above downward in front of the hemostat and then from below upward behind it, making a sort of purse string. The hemostat is then removed and the suture tied with little danger of tearing away.

*Third*, suturing of the faucial pillars. In cases in which neither of the above methods is successful, the faucial pillars may be sutured. I have never had a case requiring this, but it has proved very efficient, notably in the hands of Dr. Crosby Greene. As I understand his method, the sutures pass completely around the tonsillar

fossa, so that when they are tied the fossa is obliterated and pressure brought to bear upon all parts of its surface. It would seem hardly possible that any hemorrhage should continue under these conditions. While I believe that many and perhaps most hemorrhages after tonsillectomy may be stopped by pressure or by direct suture through a limited area, it is, nevertheless, a comfort to know that such an efficient method of controlling the hemorrhage is at our disposal.

Shortly after writing the above, I had occasion to suture the pillars in a case of hemorrhage after tonsillotomy, seen in consultation with Dr. J. E. Somers of Cambridge. The patient, a child of six years, was undoubtedly hemophilic, though this was unknown at the time of operation. The bleeding, at first profuse, had somewhat subsided when I arrived half an hour after the start. It was, however, still free. Upon clearing the fauces of blood-clot the hemorrhage increased to such an extent that it was impossible to see any of the landmarks of the throat. As pressure with a gauze sponge had no effect, I immediately clamped with hemostats point after point at random in the tonsillar fossa. After six hemostats had been placed, the hemorrhage was sufficiently controlled to allow sutures to be passed accurately around the tonsillar fossa. Three silk sutures were placed; the hemostats were then removed and the sutures tied. They controlled the hemorrhage perfectly.

In placing these sutures through the pillars, I used an aneurism needle devised by Dr. H. P. Mosher for this purpose. The needle is passed around the tonsillar fossa and is then threaded by means of a slender suture-carrier with which the thread is easily and quickly inserted in the open eye of the needle. The needle is then withdrawn carrying the thread with it.

## Reports of Societies.

### NEW ENGLAND OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

A MEETING of the New England Otological and Laryngological Society was held in Boston, Nov. 28, 1910. Dr. A. C. Getchell, President.

DR. J. PAYSON CLARK reported:

#### A CASE OF FOREIGN BODY IN THE TRACHEA. STATUS LYMPHATICUS. DEATH. AUTOPSY.[1]

##### DISCUSSION.

DR. A. COOLIDGE: Whenever the larynx or the bronchi or the trachea is invaded by any instrument, there is always the possibility of respiratory shock. I have seen one or two cases myself which were quite striking. Is it not possible that this may have had something to do with Dr. Clark's case, the shock being due to the foreign body itself, or to the manipulation in getting it out? Status lymphaticus was primarily the cause of death, but may not respiratory shock have been a contributing cause?

DR. D. CROSBY GREENE, JR., read a paper entitled

[1] See JOURNAL, p. 115.

#### REPORT OF THREE RECENT CASES OF BRONCHOSCOPY FOR FOREIGN BODIES.[2]

##### DISCUSSION.

DR. A. COOLIDGE: The relative merits of lower and upper bronchoscopy depend upon the instruments at hand and the experience of the operator. If poorly equipped it may be better to do lower bronchoscopy, but under the proper conditions the passing of a bronchoscope through the larynx is an easy matter. I should like in this connection to report a case which came to the hospital a few days ago. This is the first time I think in this city that the use of the bronchoscope was substituted for an emergency tracheotomy. The patient came in on the surgical side with a tooth plate firmly impacted in the esophagus. The plate plate had been there nearly a week and was surrounded by edematous mucous membrane. After working down through the edema I could seize the plate, and in trying to unpin it from the sides of the esophagus I turned it half over, in which position it blocked the trachea from the esophageal side and I could not get it back again. The patient began to breath badly and became cyanotic.

It occurred to me to try to pass a bronchoscope. A small one was passed easily through the glottis, and then under direct inspection I managed to get by the obstruction. The patient immediately breathed well again. The esophagoscope was then again introduced, the bronchoscope being still in place, and an attempt made to break the tooth plate and to remove it in different ways. Not being successful, the patient was returned to the surgical side, and esophagotomy done by Dr. Greenough. The patient meanwhile breathed and was etherized through the bronchoscope. The plate was taken out by esophagotomy, after which the bronchoscope was withdrawn without farther trouble. The patient made a good recovery. This illustrates that occasions may arise of emergency when tracheotomy seems inevitable, in which it may be easier and quicker to pass a bronchoscope than to do a tracheotomy.

DR. A. C. GETCHELL: I think the question of removal of foreign bodies from the bronchi is a matter of peculiar interest to what we might call the provincial practitioners, and I count myself as one. That is, What is our duty in these matters? Dr. Coolidge says it is comparatively easy to pass a bronchoscope and get a good view, but unfortunately this procedure is one that cannot be done except with practice upon a living subject, and, therefore, the matter of acquiring skill depends upon the practical experience with the patient at hand. We of the outside do not like to pass by good things; we do not like to pass them on to the metropolitan practitioners, but the question arises as to what is our duty, and I have decided for myself, as most of these cases are cases which will admit of some delay, that it is not my duty and it is not wise for me to operate on them. But I think that those of us who do not have the larger advantages of the metropolitan hospitals should equip ourselves and have a fair degree of proficiency and readiness for the esophageal and laryngoscopic work.

I have seen in Worcester two cases of foreign bodies in the bronchus, and I am pretty sure I have seen all that have come to Worcester in twenty-five years. One of them was years ago before any direct bronchoscopy was done. It was a nail. After a period of apparent lung trouble, although it was evident what the cause was, it was coughed up.

The other came to me recently and I fancy it is the case that will be reported to-morrow. I think it

[2] See JOURNAL, p. 117.

must be the case, although I did not send my name in with it, yet the mother reported to me the result. This child was brought into the Memorial Hospital with the history of having swallowed a piece of candy and that the breathing had been labored since. The breathing was suggestive of laryngeal obstruction, but it was evident from the examination of the lung that there was obstruction on the right side, if I remember rightly. Now it was a piece of candy, the mother said, and the question was whether that candy would be dissolved. Then she said it was a piece of candy containing a peanut, and that decided me. I sent her here and I think the result was entirely favorable. There was no urgent necessity of doing anything at that time, and while it was not comfortable to one's feeling of pride to send this patient to another practitioner, yet I think it was the right thing to do and I shall do it in the future.

Are there any further remarks?

DR. GREENE: With reference to this matter of doing lower bronchoscopy through a tracheal opening in case any difficulty is encountered, I should qualify my statement by saying that this applies especially to infants and young children, like the case I had. A child of a year or a year and a half has a small bronchus and it is difficult to work on. I do not think you can work to the same advantage with upper bronchoscopy in these cases that you can with lower bronchoscopy.

The performance of tracheotomy immediately after or in the course of a bronchoscopy is not attended with as much danger and is not as difficult as the ordinary tracheotomy. The trachea is already cocainized and there is not that respiratory shock and the cessation of breathing that you get on opening the trachea under ether. It can be done more rapidly and easier under these circumstances than where the tracheotomy is done first before the trachea is cocainized.

DR. HARRY A. BARNES read a paper entitled

### HEMORRHAGE AFTER TONSILLECTOMY.[3]

#### DISCUSSION.

DR. D. CROSBY GREENE, JR.: I think the cosmetic effect of suturing the tonsillar pillars is not usually desirable and we do not do it for that effect. I do not think from my experience that there is any lasting damage to the function of the pillars in suturing them, even in cases where there has been quite a good deal of displacement and distortion of the faucial pillars, but I think if other means are efficient, it is best to try them first. It seems to me that the ideal way is to find the bleeding vessel, if we can, and ligate it. My experience has been that it is sometimes very difficult to find this vessel. I have seen cases where it could be seen pretty easily, but it is a more difficult procedure in general to find and ligate it than to draw the pillars together and suture them. I do not think there is any question of that.

I agree with Dr. Barnes in regard to giving ether for suturing or for tying. I have noticed that in a good many cases of hemorrhage after tonsillectomy the mere process of etherization seems to stop the hemorrhage, and it is of itself of great aid in controlling patients, especially children. If you have a patient under ether and the hemorrhage ceases, it does not necessarily mean it is all right; I am not confident that hemorrhage will not start after the patient comes out of the ether. Gagging and movement of the walls of the fossa will often make the patient bleed again, even if hemorrhage is stopped under etherization.

I have not always included all the underlying tissue. I think the essential point is to make a good bite in the pillars, not just suture their edges together. That is ineffectual.

[3] See JOURNAL, p. 119.

## MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

### THIRTY-SIXTH ANNUAL MEETING HELD AT DETROIT, MICH., SEPT. 13, 14 AND 15, 1910.

(Continued from No. 3, p. 89.)

### GASTROSTOMY AS A CURATIVE MEASURE PER SE IN NON-MALIGNANT STRICTURES OF THE ESOPHAGUS.

DR. JOSEPH RILUS EASTMAN, of Indianapolis, Ind., stated the directly beneficial effects of gastrostomy in cases of so-called benign strictures of the esophagus were not generally appreciated. They had been too slow to break away from all notions which were developed in the pre-aseptic era when the performance of gastrostomy was attended with considerable danger. Ewald, in discussing a report of successful dilatation of a diphtheritic stricture of Rosenheim, referred to a peculiar observation which he had made in dealing with such benign stenoses, namely, the remarkable circumstances that cicatricial strictures for which gastrostomy had been made nearly always improved steadily after the stomach fistula had been provided and food had been introduced through the fistula instead of through the gullet, that is, the stricture gradually developed a larger caliber without any other treatment whatsoever. Ewald explained these phenomena in the following manner: After the gastrostomy was made it became possible to fill the stomach with food. The pull of the full stomach downward gradually stretched to some degree the elastic esophagus. When the stomach became empty the downward pull ceased, then the pressure of the food mass above the stricture had its effect upon the stretched and more yielding strictured segment. More compact masses of food might then squeeze through. The explanation of the phenomena given by Ewald could hardly be applied to all cases. After the swallowing of a hot or caustic fluid, the mucosa of the gullet might become deformed in many ways. Among many interesting deforming processes are, for example, the complete tube cast-like separation of the mucous membrane described by Strauss, the esophagitis dessicans superficialis of Rosenberg, and esophagitis exfoliativa. In these conditions, after the mucosa had become loosened from the underlying tissues and thrown into folds or ridges or pockets, it was easy to understand that the passage of food or of a bougie must be attended with great mechanical difficulty. It also seemed fair to believe that the downward traction due to the filled stomach must have the effect in some instances of smoothing the valve-like folds and irregularities of the loosened membrane, thus permitting the passage of food through a previously impassable esophageal lumen.

The gastrostomy was curative *per se* for another and more important reason. The rest afforded the esophagus was of the greatest value in allying the inflammation which preceded or attended practically all benign strictures. If ulceration be present, the passage of food, or what is worse, the arrest of food, with consequent fermentation, must maintain or increase the activity.

### FRACTURE-DISLOCATION OF THE ATLAS AND AXIS.

Dr. Carl E. Black, of Jacksonville, Ill., reported a case in which operative reduction was adopted. He called attention to the essential diagnostic points and gave some reasons why operative interference had not been adopted more frequently. He summarized the treatment of such injuries as follows: (1) Immediate reduction under an anesthetic. Walton had his patient sit in a chair while he turned the head still farther from the dislocated side. The head was then tilted to the sound side and extended while the column was rotated back into place. Hueter's method by rotation might be used. When the atlas was dislocated, before any method of reduction was undertaken, they should be sure that the odontoid process was not fractured. If the odontoid process was fractured, they were advised by some to follow the second indication and place the patient in a plaster cast which would immobilise the seat of injury until healing could take place, and then reduce the deformity. The objections to this plan are that it failed to give the patient any opportunity for relief before degeneration of the cord could take place, and subjected him to further pressure from callus, and finally it would usually be found impossible to effect reduction after so long a time. The third plan was operative interference. While considerations of the cord were all important in such injuries, they should not be deterred from making every reasonable effort to restore the dislocated or fractured spinal vertebræ, because many questions regarding the degeneration and regeneration of the cord were in the stage of controversy and remained unsettled. It would seem to be their plain duty to effect a restoration of the bony column as far as it could be done without further endangering the cord, except in those cases where the cord was hopelessly crushed beyond the possibility of the recovery of lost functions. The mechanical difficulties were great and often insurmountable, but perseverance with reasonable efforts to overcome them would certainly tell in time. It was a reasonable proposition that an injured cord had a better chance in a spinal canal with sufficient room than it had when held under even mild compression. For this reason the second indication should usually be omitted and the injured parts exposed thoroughly. If the case was one of dislocation, efforts at reduction could be repeated under the direction of the eye and finger, and failing in this a laminectomy could be made. This mistake of the treatment of the case reported was a failure to appreciate the compression produced by the posterior arch of the atlas.

### PREPARATION REQUIRED FOR THE PRACTICE OF GENERAL SURGERY.

Dr. G. W. Green, of Chicago, stated the public had a right to demand of the surgeon (1) a good foundation in the shape of a diploma from a good school. (2) Considerable time spent with a master of surgery, so that he had the following knowledge: (*a*) Sufficient experience to make a correct diagnosis. (*b*) Sufficient experience to know what it was best to do when a diagnosis was made. (*c*) That he should know just how to do the work and have enough practice to have a definite surgical technic of his own, so that he was capable of performing the operation he essays, or any complication which might arise from that operation, in an average length of time. (*d*) That his mortality should be as low and his post-operative results as good as those of the average surgeon. In return, the surgeon had a right to expect a fair remuneration and respect from the public, but no more than any other member with equal qualifications, specializing in any other branch of this, one of the noblest professions on the face of the earth.

### TUBERCULOSIS OF BONES AND JOINTS.

Dr. Edward M. Brown, of Chicago, read an exhaustive paper on this subject, and, among other things, said: The treatment of tubercular joint disease was (1) general or constitutional; (2) specific or serum treatment; (3) local. For practical purposes the local treatment might be divided into injection treatment, mechanical and operative. The advantages of operative treatment were: (1) The disease could at once be thoroughly eradicated, or so nearly so that the patient easily overcame the disease. (2) Dissemination of the disease was prevented. (3) The treatment was shortened. (4) The general condition of the patient rapidly improved. (5) The length of the limb and function of the joint were preserved to the best possible degree.

### THE RESPONSIBILITY OF PHYSICIANS IN THE TRAUMATIC NEUROSES.

Dr. H. H. Drysdale, of Cleveland, Ohio, in this paper discussed the history and manifestations of the traumatic neuroses in detail. In studying these conditions etiologically he had arrived at the conclusion that the true genesis, in a large majority of cases, was psychic, and that it was fright, fear of death, anticipated pain and anguish received unexpectedly by a totally unprepared sensorium which was the chief element to be considered. Psychologically fright was a fundamental emotion. Violent in action, it would under certain conditions of mind pervert the sense faculty, disturb the kinesthetic equipoise and deform the physical and psychical personality. He considered the manifestations of these conditions to be the involuntary expression of a break in the bodily feeling. These by degree tended to organize and combined to form a morbid mental state, a delusive conception, as it were, towards which every thought converged. A faulty environment frequently did more harm than the actual injury, as it tended to make the individual introspective and depressed, and as a consequence he threw aside the normal weapons of defense and surrendered himself to the misfortune which had assailed him. From an experience of 108 cases investigated from the standpoint of the corporation as well as that of the patient, and which included in many instances the pre-litigation, also the post-litigation, period, he had made several observations which he believed, if put into practice, would place the responsibility of adjusting these trying conditions on a scientific basis, and thus obliterate much of the confusion and disquietude which surrounded the traumatic functional disorders of the nervous system.

### HYGROMA OF THE TESTICLE.

Dr. Charles M. Harpster, of Toledo, Ohio, in his paper stated a hygroma was essentially a serous cyst, The bacillus of tuberculosis was often found, and the hygroma, if a true one, always contained hard caseous masses and rice bodies. A true hygroma of the testicle and cord was rare. The case he related was a man, forty-five years of age, who, for a number of years, suffered from a hydrocele, and this was frequently tapped by his family physician. Some months ago it was tapped and considerable blood and some pus were withdrawn. This alarmed the patient, and in consultation with the attending physician he found the testicle considerably enlarged and very painful, with some slight general disturbance. The cord and testicle were removed. Tubercle bacilli were found in the rice bodies

and tissue of the sac. Syphilis undoubtedly had been contracted but denied by the patient.

DR. RICHARD DEWEY, of Wauwatosa, Wis., reported a case of manic-depressive insanity with satyriasis, which was complicated by an abscess of the appendix. The starvation treatment was resorted to, followed by evacuation of the abscess and recovery.

DR. FRANK SMITHIES, of Ann Arbor, Mich., discussed some of the newer methods for the detection of tubercle bacilli, with particular reference to the so-called antiformin method.

### THE TUBERCLE BACILLUS CULTIVATED FROM CASES OF PRIMARY TUBERCULOUS CERVICAL ADENITIS.

DR. WILLIAM LITTERER, of Nashville, Tenn., in his paper stated nine consecutive cases of primary tuberculous cervical adenitis were examined, which resulted in the isolation of five cultures of bacillus tuberculosis of the typus humanus, and the four cultures of the typus bovinus, the classification of the types being made on the same basis of four tests, to wit: First, the morphological characters of the bacilli; second, the dysgenetic or eugenetic character of the cultures; third, the relative virulence towards rabbits, and, fourth, the reaction curve in five per cent glycerin bouillon. This latter test served admirably to distinguish between the two types, provided there was repeated application and careful control over a period, in some instances, of eighteen months. He had found that the differences in the growth of the two types dysgenetic and eugenetic on Dorcet's egg medium to be very valuable in differentiating the bovine from the human type of bacillus. Rabbit virulence had probably been more uniformly satisfactory than any of the tests in determining the differences between the two types of bacilli.

### THE TEACHING OF CLINICAL PSYCHIATRY; A MEDICAL EDUCATIONAL PROBLEM.

The President, DR. FRANK P. NORBURY, of Hospital, Ill., said the subject of the address was chosen as a text in order to present certain imperative demands of medical education of to-day. What was sought was to utilize the opportunities at hand, develop new ones, create higher ideals, readjusting ethical educational standards. The fundamental fact of the present controversy regarding medical education was that it was a part of the educational propaganda of the century — a world movement. In this country, guided in constructive analysis in medical education by the Council on Medical Education of the American Medical Association, this progress was based, first, on the integration of the educational system; second, the standardising of undergraduate work; third, the standardizing of professional courses in medicine. A virile contributory constructive power was the report of the Carnegie Foundation for the advancement of teaching, which had sounded a war-cry for medical culture, refinement in standards, appeal for higher ideals. Law standards gave medical education a commercial basis, and it became a common commodity. Modern medical education was in the transitory stage in teaching clinical medicine. This transition began with Osler's work at Johns Hopkins when he demonstrated that "teaching hath her victories no less than research." Clinical medicine to-day included the interpreters as well as the research workers. Medical sociology was the enlarged appreciation of the value of clinical medicine extended to the problems of etiology, preventive medicine, occupational diseases, and general and special civic problems. The scope and value of such work was unappreciated by the unthinking masses of the profession. Clinical psychiatry was prominent in this field of newer clinical activity. It was in contact with more points in life, its realities, its ignorance, its prejudices, its ethical discordance, and falsifications than any department of medicine. A real need existed to-day for the teaching of these master problems of the age. The teacher must be a biologist in its widest clinical interpretation; a sociologist, that he might grasp all etiological factors, and an internist, that he might be in touch with all of the physical factors entering into the problem. Modern medical teaching must give to the student the opportunity to see the whole at near range. The teaching of psychiatry was a state need, just as much as any other problem of preventive medicine.

### DIAGNOSIS OF SURGICAL LESIONS OF THE KIDNEY WITH ESPECIAL REFERENCE TO THE VALUE OF THE X-RAY AND THE CYSTOSCOPE.

DR. LOUIS FRANK, of Louisville, Ky., delivered the address in surgery. He said: Although the diagnosis of the character of new growths in the kidney might be impossible before operation, the recognition of a surgical lesion and of the surgical indications were not, as a rule, attended with great difficulty, provided a thorough, painstaking and complete examination of the individual was made. In renal calculus they had at hand means for physical examination which, in the presence of even very obscure physical symptoms, would render the diagnosis in most all cases practically certain. These were the cystoscope and the radiograph. The cystoscopic examination frequently showed a swollen ureteral orifice. The passage of the ureteral catheter would at once reveal from which kidney the blood or pus in the urine was coming. The cystoscope was not nearly so valuable an aid as the roentgen ray. It did reveal whether or not one kidney alone was involved, or whether or not a kidney had ceased to functionate. Although secondary in value in the diagnosis of renal calculus to the x-ray and to the clinical history, the cystoscope should always be employed previous to operation as an aid in ascertaining which was the diseased kidney and the condition of the other kidney in regard to the character and condition of its excretions. As a confirmatory diagnostic means the greatest value of the radiograph was in connection with renal calculi. The predominant signs of most renal affections of a surgical character were pain, hemorrhage, urinary disturbance and tumor. One or more might be absent or they might all be present in any given case.

### THE MODERN DOCTOR, HIS SUCCESSES, HIS FAILURES, HIS FUTURE.

DR. JOHN K. MITCHELL, of Philadelphia, delivered the address in medicine, and among other things, said: A time would come, since the disappearance of all disease was unlikely, when governments would make a more organized contest against it, would teach and enlist all physicians in a common army as they now educated and paid the soldier. This must come, because with improved sanitation and the constant advance of preventive means, illness would grow infrequent, so that unless he was a paid servant of the state the physician would not be able to exist. When that army was enlisted, the occurrence of preventable diseases would be as much a matter for court martial and the punishment of the person who allowed it to pass him as the failure in duty of a soldier asleep at his post. In that golden future in which sickness would be as rare as war is now, instead of being a single-handed fighter, the doctor would serve as an enlisted man in the great battle for life and strength against illness and pain; he would have no new duties, perhaps, but new powers, ability to enforce obedience

to laws of health, until, under wiser ways of life, death, the one unmedicinable disease, came only to the aged, approaching without notice, to be met without fear, bringing an ending peaceful and calm after an active life and a quiet old age.

MYOSITIS OSSIFICANS PROGRESSIVA.

Dr. Arthur R. Elliott, of Chicago, presented the clinical history of a case of this disease showing x-ray pictures, which clearly demonstrated the bony deposits in various muscular areas. The patient, a girl of seventeen, first displayed symptoms of the disease at the age of two. The involvement of the muscular system was widespread, resulting in many deformities and much restriction of movement. The general health had not as yet been greatly affected. Congenital malformations of the hands and feet existed, such as were observed in about 75% of recorded cases. This clinical record was the one hundred and second in the history of the disease since the first case was discovered by Fuke in the Philosophical Transactions in 1740. The etiology and pathology of the disease were briefly discussed.

NEUROLOGICAL AND PSYCHIATRIC ASPECT OF TUBERCULOSIS.

Dr. Charles H. Hughes, of St. Louis, Mo., stated too much attention had been devoted to the classical form of lesion of pulmonary tuberculosis and too little to the other conditions of the organism, especially to the state of the nervous system and what impression was made upon the patient's mind. He was dealing somewhat with the detrimental effect of adverse psychical suggestion, and he wished to enter a protest and be as emphatic as he could against the pronouncement positively, where it could be avoided, of a diagnosis of tuberculosis to the patient in its earlier stages, and the putting of the patient upon the outdoor treatment alone of tuberculosis. He entered his protest against ignoring the detrimental effects of psychical suggestion and would speak of the beneficial effects of it in the treatment of pulmonary and other forms of tuberculosis. To tell a patient, when he had his first hemorrhage, and the microscope revealed occasional tubercle bacilli, that he had tuberculosis and must sleep out of doors, or in a cold room, with his body well wrapped, or sleep with his face out of a window in all kinds of weather for the purpose of giving him fresh air, a thing to which he had never been accustomed, exerted a detrimental influence or adverse psychical suggestion and was a most potent influence in determining the fate of that individual. He had in mind a case that came under his observation. A friend of his was sent to Colorado at the time of his first hemorrhage. He was a vigorous man, but led a sedentary life. He neglected those physical influences that were necessary to rejuvenate the blood and increase its vital resistance, to build up the metabolism and improve the cytological processes. He went to Colorado under the psychic impression that he was affected with pulmonary tuberculosis, a sort of suggestion which sealed the fate of more patients than those who suffered from tuberculosis. He went there, occupied a cold room, and slept with his head out of a window, with a cage arrangement so as to screen himself against mosquitoes. He declined steadily. He is dead now, although he went there as a strong man physically. The adverse influence on that individual of psychical suggestion sealed his fate,— at least, prematurely. If the diagnosis and possible prognosis had been withheld in that case, in his opinion from what he knew now, the man might have been living to-day. The man who hastened to give a localised and fatal prognosis in a case did not thoroughly comprehend the influence of mind over organisms. He did not fully comprehend the influence of the higher psychic centers over the lower centers of metabolism, upward or downward. True therapeutics depended upon exalting the metabolisms of the organism and not in depressing them. Not enough attention was given from a psychotherapeutic standpoint, and from a neurotherapeutic point of view, to take care of the isolated nerve centers of the tuberculous patient, and in order to accomplish that, his digestion must be aided by continuous and unremitting hyperdigestion, artificially enforced, and an amount of sleep adequately secured.

*(To be continued.)*

## Book Reviews.

*Alcohol: A Dangerous and Unnecessary Medicine. How and Why. What Medical Writers Say.* By Mrs. Martha M. Allen. Published by the Department of Medical Temperance for the National Woman's Christian Temperance Union. Marcellus, N. Y. 1910.

This book, like many kindred publications, is a curious mixture of fact and fallacy. Despite its claim of originality, it is essentially a cento of quotations from medical writers of varying ability and reliability. It has been said that the devil can cite Scripture to serve his purpose. The purpose intended to be served by this volume is the exposition of the drug alcohol in such fashion that it may be "driven entirely from the pharmacopeia." Doubtless popular and medical opinions of the value of alcohol as a beverage or as a medicine have changed greatly in the past ten years. Doubtless, too, the medicinal as well as the convivial use of alcohol is likely to decline still further in the future. It does not seem, however, that this desirable consummation is likely to be hastened by the present volume, nor is it probable that alcohol will be "driven from the pharmacopeia" sooner than other dangerous and valuable drugs.

*Hypnotism and Treatment by Suggestion.* By J. Milne Bramwell, M.B., C.M. 12mo. Pp. xii, 216. New York: Funk and Wagnalls Company. 1910.

This little volume gives an interesting account of the history of hypnotism in a few pages and cites a considerable number of cases in the author's practice which have been benefited by suggestive treatment. While there is nothing new in the book except the presentation of personal experience along familiar lines, it is a clear and fair argument in favor of suggestive treatment. The author has been one of the leading authorities on hypnotism in London since the revival of the subject some twenty years ago, but, in spite of all the treatises that have appeared since the first publications of Liébeault and Bernheim, hypnotism seems unable to maintain a very important position among our therapeutic resources.

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## RECENT PROGRESS IN SYPHILIS.

THE past decade has been one of amazing progress in medical science. Of all the diseases the knowledge of whose nature, cure and prevention has been advanced in that time, probably none is more important than syphilis. Ten years ago it was taught that the bacillus of Lustgarten was the etiologic agent of this infection; its diagnosis was based solely on history and clinical signs; its treatment was by mercury and the iodides. The discovery of Schaudinn's spirochete, the *treponema pallidum*, as the real causative organism was the first step towards a proper understanding of the disease. Later the announcement of the Wassermann reaction led to more precise methods of laboratory study and diagnosis. Still more recently the appearance of the Ehrlich-Hata salvarsan has added a new stimulus to the comparative study of methods of treatment and consideration of their relative merits. The mass of literature provoked by the exposition and discussion of these matters is altogether too vast for a busy practitioner to cope with, and he must, therefore, rely for information chiefly on the summaries and abstracts of progress which appear from time to time in medical periodicals. One of the most useful of these which has recently been published is an article in the current number of the *Quarterly Journal of Medicine*, by Dr. Hugh Wansey Bayly, entitled "A Résumé of Some of the Evidence Concerning the Diagnostic and Clinical Value of the Wassermann Reaction." This paper is of particular interest in connection with some facts reported in a letter from the Philippines, printed in another column of this issue of the JOURNAL, and a brief review of Dr. Bayly's conclusions may prove instructive.

In the first place, from comparison of the data of a number of different observers, Bayly finds that a positive reaction may generally be considered as diagnostic of syphilis. Negative reactions are of less value, though the frequency of their occurrence in undoubted syphilis varies according to the stage of the disease and the nature and duration of treatment.

In the second place, given the diagnosis, the Wassermann reaction is of the greatest value as a control of treatment, since it tends steadily to become negative in proportion to the efficacy of such treatment. The diminution in the amount of complement fixed is regarded as a measure of the progress made. Judged by this test, "potassium iodide and the early arylarsonates (atoxyl, soamin and orsudan) seem to have but little if any" effect on the reaction. Mercury is of far greater therapeutic value. "Pills and suppositories seem to be the slowest and least efficient forms of treatment, and inunctions and intramuscular injections of insoluble compounds, the quickest and most efficient." Salvarsan ("606") has as yet been in use too short a time for positive statements as to its efficacy, but the indications are that it is our most powerful, rapid and valuable agent in the treatment of the disease. "Nearly all authorities agree that, in future, treatment, whether by mercury or '606,' must be regulated by the Wassermann reaction," which is of especial value in determining cure with reference to marriage. Bayly considers also that "the reaction is of great value in obstetric practice as a means of diagnosing latent syphilis in the mother; for, if positive, energetic antisyphilitic treatment holds out great hopes of the birth of a full time and healthy child." Its bearing on late manifestions of syphilis of the nervous system is also apparent.

In the third place arises the most important question as to the specificity of the reaction. That the reaction does occur in other diseases is true. "Of the diseases certainly not syphilitic in which a positive reaction is obtained, yaws heads the list, and in this disease as high a proportion of positives is obtained as with syphilis itself. Leprosy also produces a high percentage of positive results." Positive reactions occur frequently in trypanosomiasis and malaria, and occasionally in pneumonia and typhoid. If care be taken to rule out these infections, however, the value of the reaction as diagnostic of syphilis is not impaired.

In explanation of the occurrence of positive reactions in yaws, Bayly quotes from Wasser-

mann: "It should cause no surprise that the serum of patients suffering from other protozoal diseases gives a like reaction [to that of syphilis], considering the close relationship between spirochetes, trypanosomes and other protozoa." It is easily conceivable that such allied organisms should produce similar endotoxins, and the endotoxins are presumably the agents indirectly causing the reaction. Evidence of this may be cited in the fact that "occasionally a case is diagnosed as syphilis and gives a negative reaction, and yet after being on mercury a while a positive reaction is obtained. This is probably due to the fact that the mercury destroys numbers of the treponemata, whose endotoxins are then liberated and stimulate the production of the antibody, which is probably the substance that produces the positive reaction." Confirmatory evidence of the similarity, or even identity, of the endotoxins in syphilis and in yaws may be found in the reported great therapeutic value of "606" in the latter disease, as mentioned by our correspondent in the letter referred to above.

In diagnosis and in the control of treatment, then, the Wassermann reaction may fairly be regarded as of great and established medical value. With proper precautions regarding history and technic, the original method of Wassermann being probably the most reliable, we may consider, with Wassermann, that "in case of a positive reaction, it can be said with certainty that the investigated case is syphilitic. On the other hand, if the reaction be negative, syphilis cannot be excluded absolutely, but only with a probability of about 90%." With a test of such value for diagnosis and control, and with a new therapeutic agent of such apparent efficacy as "606," it should seem that the future offers increasing promise in the treatment and limitation of so serious a scourge as syphilis.

## COLLEGE WOMEN AS MOTHERS.

Failure of members of the most highly educated and supposedly, therefore, fittest classes to marry and produce offspring is frequently cited by foreboding speculators as evidence of so-called race suicide and degeneracy in this country. It is undoubtedly true that, for various reasons, college graduates of both sexes marry later and have fewer children than those not thus educated. What is much more important, and much harder to determine, is whether the children of such marriages suffer in quality as well as in quantity. In this connection there are some interesting statistics in the recently published Wellesley College Alumnæ Register. It appears that of all the graduates of this institution, less than a third have married. Similar statistics for Smith, Bryn Mawr and Vassar were prepared several years ago by Dr. Smith, of California, for the Association of Collegiate Alumnæ. At that time Dr. Smith found, from comparative study of these data and those of a similar number of non-college women from the same families, that approximately half of all college women marry and have an average of 1.65 children apiece, whereas the married non-college women had 1.8 children apiece. One interesting fact, brought out incidentally, was that of the children of the non-college women, less than 48% were males, whereas of those of the college women, over 55% were males. Perhaps this indicates that intellectual women are more likely, like Lady Macbeth, to "bring forth men children only." The fact may have some bearing on sex determination. Whether the change in proportion is desirable is another question.

Probably the two most detrimental physical possibilities, from a childbearing point of view, in the higher education of women, are failure of sexual development from overgreat mental activity at time of puberty, and tendency to later neurasthenic disturbances. In both these respects, however, the damage is less likely to be done in college than during the time of school preparation. Doubtless these are evils likely to right themselves in time by slow process of adjustment and survival. As a matter of fact, the prolific decline of college graduates seems dependent less on special causes than on general tendencies involving the whole of modern civilization. Whether or no college women make better wives and mothers as a result of their education is a question that lies beyond the power of statistics to answer.

## DECREASE OF SMALLPOX AS AN INDEX OF ENLIGHTENMENT.

Not only was the conquest of smallpox by vaccination the first great triumph of preventive medicine, but the continued reduction of its incidence and mortality by the same procedure remains one of the best standards and tests of enlightenment in any community. The amount of this reduction since the early days of vaccination has, of course, been enormous. In 1802, there were approximately 45,000 deaths of smallpox in Great Britain and Ireland, and this not

in a time of epidemic pestilence. When the disease was introduced on this continent, the native Mexicans and Indians perished of it literally by millions. It is gratifying that our recent invasion of the Philippines has not been attended by a similar result, but that instead the number of deaths was reduced by wholesale vaccination from over 6,500 annually to none in the year 1906–7.

But salutary measures, like prophets, are often least honored at home. During the six months ending Dec. 31, 1910, there were reported in the United States 9,262 cases of smallpox, with 203 deaths. Of these, 1,665 cases and 7 deaths were in North Carolina. In Oklahoma, there were in this time 1,187 cases, in Kansas 1,049, in Michigan 1,000, and in Texas 881 cases and 28 deaths. In some other states which make a better showing, the figures are invalidated by unreliability and incompleteness of registration. It is probably not too much to say that 9,000 of these cases and 200 of these deaths might have been prevented by universal protective vaccination. Their occurrence is a reproach to the communities in which they were permitted to happen. Such instances serve but to illustrate how lamentably popular ignorance and prejudice may impede the progress of medical salvation.

## SIR FRANCIS GALTON.

THE death in London, on Jan. 18, of Sir Francis Galton removes from the scientific world one of its most eminent figures. Beginning life, after an extended collegiate education, as an explorer, he became particularly interested in the problems of anthropology and biometry, and his studies in this field made him later a student, exponent and critic of doctrines initiated by Darwin and others of the great nineteenth century school of English thinkers. The culmination of his studies in such subjects was his foundation in 1905 of the Laboratory of Eugenics at University College, London, the first practical attempt to apply the principles of our knowledge in heredity and evolution to the problems of race betterment. Dr. Hart has said, with a touch of Scotch acerbity, that "the founder of biometry in Britain is Galton, and Karl Pearson is its prophet"; but Dr. Saleeby has more reverently and appropriately referred to Galton as "the august master of all eugenists." Whatever time may decide of the merit of his work or the accuracy of his laws, it is certain that he possessed the noble and serious earnestness which has made so many English scientists not only great scholars but great men.

## MEDICAL NOTES.

LARGE SEIZURE OF OPIUM IN SAN FRANCISCO. — Report from San Francisco states that on Jan. 18 the United States customs officers seized in that port $20,000 worth of opium. This is said to be the largest seizure of the kind ever made in the city.

TYPHOID FEVER IN MOSCOW. — It is reported from Russia that typhoid fever is now epidemic in the region about Moscow, and that there are in that city at present over 700 cases. The municipality of Moscow is said to have appropriated the equivalent of $50,000 for the purpose of combating the further spread of the disease.

DISCOVERY OF A NEW ELEMENT. — It is announced from Paris that M. Urbain has reported to the Academy of Science in that city his discovery of a new element, which he has named celtium. It is said to resemble the element lutecium which he discovered in 1908.

PRECAUTIONS AGAINST SMALLPOX IN PHILADELPHIA. — It is reported from Philadelphia that following the recent death in that city of a small boy from malignant smallpox, the entire vicinity of his home was quarantined and nearly three thousand persons in that district were vaccinated. The twelve other occupants of the infected house were sent to the detention hospital for observation.

"THE DOG IT WAS THAT DIED." — Report from Baker City, Ore., states that on Jan. 19 a band of mad coyotes, supposed to be infected with rabies, invaded the neighboring village of Durkee, biting a large number of people and dogs. After killing or driving away the coyotes, the local police are said to have shot every dog in town to prevent possible spread of the infection. What was done for the human victims is not stated. Perhaps, to complete the analogy, they will, like Goldsmith's man of Islington, "recover of the bite."

END OF CHOLERA EPIDEMIC IN TURKEY. — Report from Turkey states that the epidemic of Asiatic cholera in that country has now been officially declared at an end, and that the shipping quarantine against Constantinople has been raised. It is said that since the outbreak of the infection last September there have been 1,318 cases and 793 deaths of the disease. It is interesting to note that practically all the foreign epidemics of cholera show a death-rate of about 50%.

A PRECOCIOUS GRANDFATHER. — It is reported from Raleigh, N. C., that Victor Beyson, of the

neighboring town of Spencer, in Rowan County, has just become a grandfather at the age of thirty-three. Beyson is said to have married, at the age of fourteen, a girl of thirteen and one-half. Their eldest son, now sixteen years old, married last spring a girl of fifteen, who has recently given birth to her first child. All the persons concerned are said to be of pure-blooded English descent. Such premature matrimony is rather rare in this race, and, however its result may seem to operate against the decline of population, is hardly to be recommended as a practice from the point of view of eugenics.

Retirement of a Naval Surgeon. — The committee of the National Senate on naval affairs has recently reported favorably a bill to place on the retired list of the United States Navy Dr. James Henry Payne (Harvard A.B. 1886, M.D. 1889), of Boston. Dr. Payne entered the navy in 1898 as a volunteer surgeon during the war with Spain, and in 1900 was commissioned assistant surgeon in the regular service.

Changes in the Journal of Experimental Medicine. — It is announced that beginning with its thirteenth volume this year, the *Journal of Experimental Medicine*, published in New York by the Rockefeller Institute for Medical Research, will be issued monthly instead of every other month as heretofore. There will now be two volumes a year. Dr. Benjamin Terry is to take the place of Dr. Eugene L. Opie as associate editor of the magazine with Dr. Simon Flexner.

Medical Field Training Camps. — It is reported from Washington, D. C., that the United States War Department has disapproved, for lack of sufficient funds, "the recommendation of the Surgeon-General of the army for conducting two camps of instruction during the coming summer for the benefit of medical officers of the organized militia." During 1909 there were several such camps, at which temporary field hospitals were erected and instruction given in their administration and in the field discipline and duties of medical and ambulance corps. The project was considered highly successful, and its repetition this year was urgently recommended, but the demand on available army appropriations is said to be too great to make this possible.

Accidental Cure of Uncinariasis. — A story, good enough to be true, has recently been told of an anemic youth in North Carolina who, in 1867, went to a doctor for some medicine. Meaning to give him some simple tonic, the busy, or perhaps lazy, and certainly careless, physician told his patient to take a dose from the second bottle on the first shelf of the medicine closet. The boy got the wrong bottle and took a large potion of oil of thyme. When he recovered from the violent purging which followed, his health became miraculously improved and he grew into a robust and vigorous man. Thus occurred the first, and accidental, cure of an unsuspected, undiagnosticated case of uncinariasis.

Progress of the Plague in China. — The epidemic of bubonic plague in Manchuria and northern China is apparently steadily extending. Harbin, Fudziadian, Mukden, Kirin, Tieling and Kwan-Cheng-Tze are all centers of the disease, from which infection is being spread in every direction. Ignorance and superstition of the natives blocks the efforts made by physicians and officials to check the scourge. On Jan. 15 the number who up to that time had died in Manchuria alone is said to have reached 1,752, and since then from 150 to 200 deaths have been reported daily. Most of these are Chinese, but several Russians and one Frenchman have also died of the disease. The Chinese quarantine instituted at the Great Wall has not sufficed to prevent the plague from passing to the southward, and deaths from the disease have already occurred in Chin-Wang-Tao, and at Pekin. Advices from Che-Fu state also that the infection has been carried by junks across the gulf of Pe-Chi-Li and seems likely to extend through Korea. In the provinces of Anhui and Kiangsu the situation is complicated by flood and famine. One million Chinamen are said to be starving in that district, and an appeal has been made by missionaries for a fund of $2,000,000 to provide them with food.

## BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Jan. 17, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 46, scarlatina 44, typhoid fever 2, measles 51, smallpox 0, tuberculosis 71.

The death-rate of the reported deaths for the week ending Jan. 17, 1911, was 15.90.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, Jan. 21, 1911, was 243, against 255 the corresponding week of last year, showing a decrease of 12 deaths, and

making the death-rate for the week, 18.39. Of this number 119 were males and 124 were females; 234 were white and 9 colored; 131 were born in the United States, 106 in foreign countries and 6 unknown; 55 were of American parentage, 149 of foreign parentage and 39 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 51 cases and 4 deaths; scarlatina, 45 cases and 4 deaths; typhoid fever, 4 cases and 0 deaths; measles, 68 cases and 2 deaths; tuberculosis, 44 cases and 25 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 34, whooping cough 2, heart disease 32, bronchitis 5. There were 10 deaths from violent causes. The number of children who died under one year was 34; the number under five years, 54. The number of persons who died over sixty years of age was 74. The deaths in public institutions were 96.

A MILK DEALER FINED. — In the Superior Criminal Court at Boston last week, a dealer of this city was fined $50 for having in his possession, with intent to sell, milk not up to the standard required by law. He had been previously fined $20 in a lower court, but had appealed from the decision.

PROPOSED HOSPITAL FOR INCURABLES. — As a result of its recent investigations, the Massachusetts State Board of Charity reported last week its opinion that the proposed establishment of a state hospital for incurables is unnecessary. The board believes that such cases should be cared for by their own cities and towns.

ADDRESS BY DR. WILEY. — At a meeting of the Economic Club, at Worcester, Mass., on Jan. 19, Dr. Harvey W. Wiley, of Washington, D. C., in an address on "The Economy of Pure Food," opposed the selling of food products in small packages at a fixed price, and advocated the sale by weight of all such products, including eggs.

MEDICO LEGAL EXAMINATION OF BLOOD AND BLOOD STAINS. — At the meeting of the Rhode Island Medico-Legal Society, Jan. 19, Dr. W. G. Dwinell, of Pawtucket, presented a comprehensive paper on the subject, "The Medico-Legal Examination of Blood and Blood Stains." The paper dealt particularly with the reactions of human and rabbit's blood in tests made and is a valuable addition to the compilation of data being prepared in connection with the legal side of the medical profession.

MEETING OF MEDICAL WOMEN. — The thirty-third annual meeting of the New England Hospital Medical Society of Women, held in Boston on Jan. 18, was attended by forty-two members. The following officers were elected for the ensuing year: President, Dr. Blanche A. Denig; vice-president, Dr. Sarah Stowell; treasurer, Dr. N. Louise Lawrence; secretary, Dr. Margaret L. Noyes.

MEETING OF ST. LUKE'S GUILD. — A quarterly meeting of St. Luke's Guild of Catholic Physicians was held in Boston last week. Dr. Thomas Dwight, who presided, read a number of letters of greeting from similar bodies in London, Italy, Spain and the Netherlands. Addresses were made by Dr. Thomas F. Harrington on "The Preservation of Life," and by Dr. Frederick W. Johnson on "Ectopic Gestation."

A CENTENARIAN. — In the issue of the JOURNAL for Dec. 29, 1910, we noted the celebration on Dec. 20 by Mrs. William T. Temple, of Reading, Mass., of the supposed centennial anniversary of her birth. Mrs. Temple died on Jan. 18. She is survived by two of her five children and by nine grandchildren.

A LIVING CENTENARIAN. — Daniel Short, of Cambridge, Mass., who alleges that he was born on Nov. 11, 1810, is still employed as driver of a dump cart in that city. Twice recently he has received minor injuries by falling from his cart, but has returned immediately to his work, declaring that while he lives he will not be idle. Similar praiseworthy energy and persistence might to advantage be exhibited by many persons not of his advanced years.

TRANSMISSION OF POLIOMYELITIS. — In a recent report to the Connecticut State Board of Health, Prof. Herbert W. Conn, of the Biological Department of Wesleyan University, who has been investigating the recent epidemic of poliomyelitis in Middlesex County, of that state, expresses his belief that the disease is transmitted by fleas, which, as intermediate hosts, are carried from one household to another in the fur of cats and dogs.

BEQUESTS TO MAINE INSTITUTIONS. — Among numerous charitable bequests in the will of the late Mrs. Gardner Blanchard Perry, filed on Jan. 16 for probate at Newport, R. I., is one of $5,000 to the Home for Aged Women at Bangor, Me., and one of $4,000 to the Eastern Maine General Hospital at Bangor for the maintenance of a free cot. Mrs. Perry died in December, 1910, at Pasadena, Cal.

Mange as a Contagious Disease. — At a hearing last week before the committee of the Massachusetts Legislature on agriculture, Dr. William C. White, of Newtonville, Mass., an agent of the State Cattle Bureau, advocated the inclusion of mange in the list of contagious diseases affecting horses and cattle. This disease is said to be spreading among horses and milch cows, and is believed to be of infectious origin.

A Leper in Boston. — A case of leprosy was discovered in Boston last week in the person of a Japanese who recently came to this city from the West. Pending his removal to the leper colony on Penikese Island, he has been sent to the detention hospital on Southampton Street, and the house in which he was lodging has been fumigated by the board of health. This is the first case of leprosy in Boston since the discovery of two cases here over a year ago.

Objection to Free Individual Cups. — At a hearing last week before the committee of the Massachusetts Legislature on public health, the counsel of certain railroads made objection to the proposed bill requiring that every passenger car in this state shall be provided with free individual drinking cups to the number of twice its seating capacity. Considering the cost of such a procedure, this objection on the part of railroad companies seems well founded.

### NEW YORK.

Appointment of Dr. Wm. B. May. — Dr. William B. May, of Buffalo, has been appointed director of the Division of Communicable Diseases of the State Department of Health. Dr. May is well qualified for the position, having been associated with the health department of the city of Buffalo for the past twelve years.

Bequests. — By the will of the late John W. Ellis, of New York, $10,000 is left to the Nursery and Child's Hospital. The bequest is made in memory of the testator's wife, Caroline S. Ellis, and is to be added to the building fund of the institution.

By the will of the late Ludwig Rothschild, of New York, $500 each is left to the German Hospital, Mount Sinai Hospital, the Montefiore Home and Hospital for Chronic Invalids, and three other charities.

Meeting of Medical Association of Greater City of New York. — At the annual meeting of the Medical Association of the Greater City of New York, held Jan. 16, Dr. Thomas Darlington, recently head of the city health department, was elected chairman for the Borough of Manhattan. At this meeting Dr. R. L. Watkins demonstrated a remarkably ingenious portable photomicrographic camera, the planning and construction of which has occupied him for many years. It will photograph any microscopic object, and the apparatus contains a microscope, camera, box, arc and incandescent lamps, and a rheostat weighing only a few ounces. The object to be photographed can be viewed either in the usual way through the microscope alone, or on a mirror, with both eyes open, without looking through the microscope.

A Possible Cure for Cancer. — It is announced from Albany that Dr. Harvey R. Gaylord, of the State Cancer Laboratory at Buffalo, has made a report in which he states that after ten years of research work he is prepared to furnish a serum which it is believed is curative of cancer, one patient having been entirely cured of the disease by means of it. No particulars are given. In accordance with a recommendation made in the report, State Senator Loomis, on Jan. 19, introduced into the Legislature a bill appropriating $65,000 for the erection of a cancer hospital adjoining the laboratory in Buffalo. Among the trustees of the institution named in the bill are Drs. Roswell Park and Charles Cary.

Scholarship in Ophthalmology. — A scholarship in ophthalmology has been founded by William A. DuBois, Matthew B. DuBois and Katherine DuBois, sons and daughter of Dr. Abram DuBois, who have presented to Columbia University the sum of $18,000 to be used as a fund for this purpose. This is to be known as "The Dr. Abram DuBois Memorial Fund." The scholarship is open to graduates of the College of Physicians and Surgeons who have satisfactorily completed a term of service in an eye hospital and who have given evidence of serious intention of pursuing ophthalmology as a specialty. The holder of the scholarship is expected to devote himself to postgraduate studies, preferably of a scientific character, connected with ophthalmology, in foreign and American universities. The income amounts to about seven hundred dollars a year. The bestowal of this scholarship is in the hands of a committee consisting of the Professor of Ophthalmology, the Dean of the Medical School and Dr. Edward L. Partridge.

CONTINGENT BEQUEST TO RED CROSS HOSPITAL. — Under the will of the late William T. Wardwell, of New York, for many years the treasurer of the Standard Oil Company, and who was the Prohibition candidate for governor in 1900, the New York Red Cross Hospital will receive $100,000, provided it continues its policy of the non-use of alcohol as a medicinal agent. The will prescribes that the hospital shall avoid even tinctures when equally desirable action can be obtained with fluid extracts or alkaloids, and shall reduce to a minimum the use of other potent or narcotic drugs which might induce habit or produce injurious after-effects. Mr. Wardwell has always been the principal benefactor of the Red Cross Hospital, and to his liberality it is indebted for its present commodious building on Central Park West. His gifts have been made on the condition that alcohol should not be employed, and the will provides that three arbitrators shall decide whether the hospital has been true to its tenets — one selected by the directors, one by the trustees under the will and a third chosen by the two bodies.

THE COLD STORAGE EVIL. — In his inaugural address, delivered on Jan. 17, Governor Woodrow Wilson, of New Jersey, expressed himself very emphatically on the cold storage evil. "It is estimated," he says, "that most of the food supply of the people of Northern New Jersey, and half the food supply for New York City, is kept in cold storage warehouses in Hudson County, awaiting the desired state of the market. . . . The result is not only to control prices, but also to endanger health, not because of the effect of too long storage upon the foodstuffs themselves, but because of the deleterious effects of taking them out of cold storage and exposing them to thaw in the markets. The least effect is loss of nutritious quality; the worst, the generation of poisons by decay and even putrefaction. No limit at all is put upon this abuse by law, and strong influences are brought to bear by interested parties to prevent the enactment of remedial legislation. . . . I earnestly urge that the Legislature take up this important matter at the earliest possible time and push some effective law of inspection and limitation to enactment. It would give me great pleasure to sign a bill that would really accomplish the purpose."

OPENING OF EXTENSION TO CARNEGIE LABORATORY. — The building which has been erected as an extension to the Carnegie Laboratory of the University and Bellevue Hospital Medical College was formally opened on Jan. 10. This addition, which is largely the gift of Andrew Carnegie, who donated the original laboratory, cost, with the land, $125,000. At the dedicatory exercises addresses were made by Mr. Carnegie; Prof. William H. Welch, of Johns Hopkins University; Herman M. Biggs, secretary of the faculty of the New York University Medical School; and Jerome D. Greene, general manager of the Rockefeller Institute. Dr. Egbert Le Fevre, dean of the Medical School, presented to Mr. Carnegie, on behalf of the laboratory staff, four volumes, specially bound in morocco, containing researches in medical science published by members of the staff. Mr. Carnegie described this institution as one of his "very first children," and spoke of the wonderful advances in bacteriology and other branches of research which had been made during the twenty-five years of its existence. In concluding his remarks he intimated that he might be willing to make further gifts to the University Medical School if its needs required them. In the course of his address, Dr. Biggs said that the laboratories of the New York City Health Department were the first municipal laboratories in the world and that their establishment followed and was inspired by the original Carnegie Laboratory. Largely on account of the work done in them, there were 50,000 fewer deaths every year in the city than would occur if the death-rate were the same as eighteen or twenty years ago. The exercises were held at three o'clock in the afternoon, and at 5 P.M. the first of this year's course of lectures on the Herter Foundation was given by Dr. H. R. Cushny, now professor of pharmacology in the University of London.

POLLUTION OF BRONX RIVER. — At the request of the boards of health of the towns of Scarsdale and Greenburgh, Westchester County, the State Department of Health recently made an investigation of the pollution of the Bronx River from White Plains to Bronxville. So many sources of contamination were found that it was declared by the officials of the department that the present pollution of the stream sets up a condition which constitutes a public nuisance along the Bronx adjoining the towns of Scarsdale and Greenburgh and along the major portion of its flow adjoining the city of Yonkers and the town of Eastchester. It is stated, however, that this condition of nuisance will be almost wholly if not entirely eliminated by the discharge of sewage from the

various systems and sewage-disposal plants into the Bronx Valley trunk sewer upon its completion, rather than into the Bronx River, as at present, and the authorities of the districts concerned have been advised to make connections between their respective sewerage systems and this trunk sewer at the earliest possible moment. The Bronx Valley trunk sewer is fifteen miles long, three miles of it being in tunnel, and its completion is expected during the present month, when it will be ready for use as an outlet for the sewage from the towns and villages through which it passes. This is a matter of no little interest to the city of New York, as the Bronx, after passing through Westchester County, flows through the great Bronx Park and thence through the Borough of the Bronx until it empties into Long Island Sound.

## Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

JAN. 14, 1911.

1. HALL, J. N. *Why the General Practitioner should Study Surgical Diagnosis of Gastric and Duodenal Ulcer.*
2. *ENGMAN, M. F., MOOK, W. H., MARCHILDON, J. W. *Report of Sixteen Syphilitic Patients Treated with Ehrlich's Salvarsan.*
3. *RIES, E. *Diagnosis of Operability of Carcinoma of the Cervix Uteri.*
4. FREDERICK, C. C. *Use of the Cautery in Treatment of Carcinoma of the Cervix.*
5. *JACOBSON, J. H. *Results Obtained by the Radical Abdominal Operation for Carcinoma of the Uterus.*
6. *SAMPSON, J. A. *The Participation of the Tissues Adjacent to the Uterus and of the Pelvic Lymphatics in Uterine Cancer.*
7. FLETCHER, M. H. *Repair of Cementum in Relation to the Treatment of Alveolitis.*
8. GOODMAN, E. H. *A Suggestion for the Use of the Stanton Sphygmomanometer.*
9. BIRD, M. D. *Apparatus for Proctoclysis.*
10. NORTHRUP, W. P. *New Reflex Sign in Meningitis. Diagnosis.*
11. BURNETT, C. T. *Apparatus for the Preparation of Bacterial Suspensions.*
12. PLONDKE, F. J. *The Treatment of Puerperal Eclampsia.*
13. PUSEY, W. E. *The Situation as Regards Salvarsan.*

2. Engman, Mook and Marchildon, analyzing sixteen cases of syphilis treated by salvarsan, report the development of one case of nephritis which later cleared up. Two cases of nerve syphilis were worse than before injections. None of the patients showed symptoms of arsenical poisoning. The drug had remarkable effect on the cutaneous lesions.

3. Ries makes some very valuable suggestions in reference to the operability of cancer of the cervix. If the cystoscope shows that the carcinoma has grown through into the bladder it has been of value, but the other conditions found in the bladder, such as edema, bullous edema and distortion of the bladder, are not reliable. They may be due less to the carcinomatous invasion of the bladder than to the infected condition of the cancer. It is one of the important advances achieved by the performance of the radical abdominal operation that we know now that a uterus which appears immovable on combined palpation may be perfectly operable, because in a number of cases the fixation is not due to carcinoma, but to chronic inflammatory thickening of the ligaments. Every radical abdominal operation for carcinoma of the cervix should be begun as an exploratory operation, for a rapid review of the liver, abdominal glands and bladder may show metastatic conditions which would contraindicate further operation. The condition of the glands is very difficult to interpret correctly. Large glands may or may not be cancerous, and small glands are not necessarily free from cancer.

5. Jacobson gives the following figures as to the operability of uterine cancer. Among continental surgeons, including Wertheim's figures, there is an operability of 65.17%, a primary mortality of 19.94%, a permanent cure from three to five years in 40.72% and an absolute cure in all cases of 21.14%. The American average is operability 35%, primary mortality 15.17%, permanent cures after five years 8.39%, and absolute cure about 1%. A comparison with results obtained by other forms of operation shows that the best results are obtained from radical abdominal operations.

6. Sampson says that the most radical operation consistent with a "permissible primary mortality" is indicated, especially in early cases. It is impossible to remove at operation all of the lymph nodes which may be infected, and at best we must be satisfied with an incomplete removal. We should do the most thorough operation, however, which the patient will stand. The most important aid to the treatment is earlier diagnosis. [E. H. R.]

THE LANCET.

DEC. 10, 1910.

1. GOULD, A. P. *The Bradshaw Lecture on Cancer.*
2. *PITT, G. N. *The Bradshaw Lecture on the Results of Bronchial Obstruction.*
3. *MCINTOSH, J., AND FILDES, P. *The Theory and Practice of the Treatment of Syphilis with Ehrlich's New Specific, "606."*
4. NEWBHOLME, H. P. *A Pedigree Showing Bi-Parental Inheritance of Webbed Toes.*
5. NORMAN, R. H. *Note on an Obscure Case of Peritonitis.*
6. MACNAUGHTON-JONES, H. *Uterine Cervical Polypus Undergoing Malignant Degeneration.*

2. Pitt, in a long and profusely illustrated article, discusses the results of bronchial obstruction. He first classifies some of these results in eleven headings and then discusses the causes of bronchial obstruction as follows: *External* causes: (1) Aneurysm, (2) malignant disease, (3) enlarged glands, (4) gummata, (5) abscess, (6) dilated left auricle. *Internal* causes: (1) Bronchiolitis, (2) syphilitic ulceration with scarring, (3) primary malignant disease of a bronchus, (4) foreign bodies in the bronchus. He goes over these different causes in detail and presents numerous illustrative cases. The paper is of considerable interest and covers the ground well.

3. McIntosh and Fildes add one more article to the many already published on "606." They discuss the underlying principles, the method of technic, precautions to be followed, dosage, effect on the lesions, effect on the Wassermann reaction and relapses. They present numerous illustrative cases. [J. B. H.]

DEC. 17, 1910.

1. STEPHENSON, S. *A Lecture on the Aftermath of Eye-strain.*
2. *INMAN, A. C. *The Specific Diagnosis of Pulmonary Tuberculosis.*
3. WARRINGTON, W. B. *Note on Tuberculous Meningitis, with Especial Reference to the Invasion Symptoms when the Disease Occurs in Adults.*
4. *FRASER, H., AND STANTON, A. T. *The Etiology of Beri-Beri.*
5. KENNEDY, A. M. *Cases of Primary Carcinoma of the Appendix Vermiformis.*

2. Inman, in a most valuable paper, takes up the specific diagnosis of pulmonary tuberculosis. His conclusions are as follows: (1) In the early diagnosis of pulmonary tuberculosis the recent methods of concentration by means of antiformin should always be employed in the sputum and feces. (2) The difficulty of interpreting the results of the various tuberculin tests seriously limits

their value in the diagnosis of active pulmonary tuberculosis. (3) A positive opsonic index test is of undoubted value in the diagnosis of active pulmonary tuberculosis. A negative opsonic index test must be taken with reserve. The interpretation of the result rests with the clinician who can take into consideration all the additional factors in the diagnosis of the case. In this article Inman gives the technic of the various newer methods of sputum and feces examination, discusses Rosenberger's claim to have discovered tubercle bacilli in the blood of consumptives, bringing forward evidence of others chiefly not confirmatory of this; he gives various tables showing results of examination of feces and sputum; he discusses at length the various tuberculin reactions, skin, eye and subcutaneous, and at some length takes up the opsonic index test with a table of 100 cases. There is an extensive bibliography.

4. Fraser and Stanton, discussing the etiology of beriberi, believe that white polished rice when forming the staple of diet in man is the cause of beri-beri; when such rice is fed to fowls it produces in them a disease closely analogous to the disease in man. The addition of rice polishings to a diet of white rice is an effective preventive of the development of the disease in fowls. [J. B. H.]

DEC. 24, 1910.

1. SHAW, L. E. *An Address on the Disorder of Medical Charity.*
2. COLT, G. H. *An Address Entitled "Medical Students and Medical Practitioners."*
3. *SUTHERLAND, G. A., AND BURGHARD, F. F. *The Treatment of Splenic Anemia by Splenectomy.*
4. MCCANN, F. J. *The Surgical Treatment of Cancer of the Vulva and Its Pre-Cancerous Stages.*
5. SANDWITH, F. M. *The Value of Vaccination and Re-vaccination.*
6. GULLY, P. *A Fatal Case of Anemia in Which the Widal Reaction was Obtained.*
7. AARONS, S. T. *On the Use of Pituitary Extract in Obstetrics and Gynecology.*
8. THRESH, J. C., AND BEALE, J. F. *The Practical Sterilization of Potable Waters by Means of the Ultraviolet Rays of Light.*
9. HIRSCH, C. T. W. *Motoring Notes.*

3. Sutherland and Burghard describe the details of two cases of splenic anemia in which splenectomy was successfully done. In the first case, four years after operation, the patient was perfectly well; the second had been operated on too recently to tell of ultimate results. Both had failed to respond to medical treatment. The writers describe the operations in detail and make some general remarks about the disease. [J. B. H.]

BRITISH MEDICAL JOURNAL.

DEC. 24, 1910.

1. *PHILIP, R. W. *Introductory Address on Rest and Movement in Tuberculosis.*
2. DOYNE, R. W. *A Lecture on "Eye" in Sport.*
3. *BOLTON, C. *The Influence of Diet upon the Formation and Healing of Acute Ulcer of the Stomach.*
4. *GROVES, E. W. H., AND JOLL, C. *Thyroid Grafting and the Surgical Treatment of Exophthalmic Goiter.*
5. MOLLISON, W. M. *Common Causes of Discharge from the Ears, and Its Treatment.*

1. Philip emphasizes the need of exercise as well as rest in the treatment of consumption. He brings out the point that consumption is a general toxemia and not a disease purely localized in the lungs; this toxin is particularly harmful to muscle and nerve tissue, as shown by the great wasting which occurs. He explains the gradual development of the work treatment at the Royal Victoria Hospital in Edinburgh, and gives the details of the system of badges patients wear according to the class and amount of work they are doing. Out of 109 patients now under treatment at this hospital, 103 have gained weight under this system of graduated exercises, and more than one third of the patients have reached the highest grade of activity.

3. Bolton describes the continuation of his experiments on gastric ulcer in cats. These ulcers, as previously described, he has been able to form by injecting a "gastrotoxic serum." His present paper is on the influence of diet upon the formation and healing of acute ulcers. He concludes from his investigations that (1) ulceration is the more rapidly produced in proportion as the gastric juice is allowed a longer period of contact with the stomach wall. (2) On a milk diet the epithelium grows more rapidly over the base of an ulcer than on a meat diet. (3) In meat-fed animals the base of the ulcer is frequently quite uncovered by new epithelium at the end of twenty days. (4) In treatment, the following principles should be observed: (*a*) During the early stages such food should be given which does not long remain in the stomach and which does not excite much juice. (*b*) The period of treatment should be at least three weeks in bed. (*c*) Starvation diet is not advisable as the general nutrition suffers too much. (*d*) High degrees of acidity which are often present should be counteracted by an alkali.

4. Graves and Bolton describe a case of thyroid grafting the essential features of which were: (*a*) Temporary improvement following thyroidectomy. (*b*) The occurrence of tetany after subtotal thyroidectomy in which the parathyroids had been preserved. (*c*) Cure of tetany by thyroid medication. (*d*) Persistence of dyspnea and tachycardia in spite of thyroidectomy. (*e*) Occurrence of tetany after thyroid grafting. (*f*) Cure of this by hypnotic suggestion. (*g*) Great amelioration of symptoms by thyroid grafting. [J. B. H.]

DEC. 31, 1910.

1. *RUSSELL, W. *A Post-Graduate Lecture on Hyperchlorhydria and Its Complications.*
2. WILLIAMS, O. T. *The Distribution of Appendicitis, with Some Observations on Its Relation to Diet.*
3. *HICKS, P. *A Contribution to the Clinical Study of Chronic Movable Kidneys.*
4. VERGE, A. *The Use of Old Tuberculin Ointment in the Diagnosis and Treatment of Lupus Vulgaris.*
5. MITCHELL, W. *Cancer of the Breast: Amputation and After-Treatment by Secondary Rays of Known Quality: A Suggestion.*
6. KIRK, T. S. *A Note on Cleft Palate Operations.*
7. JUBB, A. A. *A Case of Dwarfism.*

1. Russell, in a general article on hyperacidity, describes its symptoms, pathogenesis and treatment, and in brief its relation to acute gastric ulcer, pyloric spasm, chronic ulcers and gastroptosis.

3. Hicks makes a plea for more general and patient investigation into the effects of chronic movable kidneys upon general health. He describes the various symptoms which may arise and urges early diagnosis and treatment. In regard to treatment after rest in bed, he advises the use of a carefully fitted truss or belt; he describes in detail the method of properly applying such a belt. He favors operation only after careful trial of other measures. [J. B. H.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 50.

DEC. 15, 1910.

1. GAFFKY. *Memorial to Robert Koch.*
2. HIRSCH, C. *Pathology and Treatment of Pneumonia.*
3. SCHOLTZ, W., SALZBERGER, AND BECK. *The Treatment of Syphilis with Arsenobenzol, especially the Preservation of the Preparation and the Method of Its Use.*
4. v. GRÓSZ, E. *Arsenobenzol in Syphilitic Eye Disease.*
5. *SEIFFERT, G. *A New Serological Method for Diagnosis of Syphilis.*
6. HOFBAUER, J. *Pregnancy and Tuberculosis.*
7. BLOS, E., AND KRONSTEIN. *Treatment of Tubercular Fistula with a Balsam of Peru Derivative called Zimtsdureallylester, also Observations on Treatment with Hetol and a New Point of View in Tuberculin Therapy.*
8. HERRMANN, A. *Double Extension in Fractures.*
9. HAMMERSCHLAG. *Advances in Gynecological Practice.*
10. LUBLINSKI, W. *Is the Geographical Tongue Hereditary?*
11. STRAUSS, A. *An Irrigator with Reserve Flasks.*

5. Seiffert reports a modification of Weichardt's test for syphilis in the serum of patients by means of a physicochemical method. The test depends upon titration to determine the acidity or alkalinity under certain conditions,

and in this article he explains the technic in detail. He has tried out the test with sera, using the Wassermann as a control. This test has always been positive when the Wassermann test was and occasionally it was positive when the Wassermann was negative.

He considers that it has some value in determining the quantity of immune bodies developed in a syphilitic individual. He hopes for further investigation by others with the test. [C. F., Jr.]

No. 51. Dec. 22, 1910.

1. Baisch. *Indications for and Technic of Version.*
2. *Klemperer, G. *Diabetic Lipemia.*
3. Jadassohn, J. *Our Experiences with Salvarsan.*
4. Gerber. *Further Communication in Regard to Spirochete of the Buccal Cavity and Their Relation to Salvarsan.*
5. *Schrumpf, P. *Psychic Variation of Blood Pressure and Its Importance in Practice.*
6. Müller, R. *Cultural Differences between Paratyphoid Bacillus and Bacillus Enterieus.*
7. Schidorsky, H. *Emmerich's Theory in Regard to Cholera Toxin.*
8. Kakowski, A. *Method of Counting Organized Elements in the Urine.*
9. Köhler, A. *The Next Aims in Röntgen-Ray Technic.*
10. Jahr, G. *A Warm Bandage or Compress Heated by Electricity.*
11. Schall, M. *Recent Technical Advances in Medicine.*

2. The fat found in the blood of diabetic patients is not from the subcutaneous fat as that frequently persists pretty well. The fat is composed chiefly of cholesterin and lecithin and is the result of the increased metabolism. More fat occurs as a result of the breaking down of cells and more is needed for the building up of fresh cells.

5. Variations in blood pressure due to psychic influences only increase the systolic pressure and do not affect the diastolic pressure as a rule. This applies also to cases in which the blood pressure is already elevated. [C. F., Jr.]

Berliner Klinische Wochenschrift. No. 51.

Dec. 19, 1910.

1. *Melchior, E. *Chronic Duodenal Ulcer.*
2. Hirschfeld, F. *The Relation between Tumors of the Genital Apparatus in Women and Diabetes.*
3. Sölgaard, M. *Leprosy and Carcinoma.*
4. Pinkuss, A. *The Value of the Antitrypsin Reaction in the Diagnosis and Prognosis of Carcinoma.*
5. Donath, J. *Further Contribution to the Treatment of Progressive Paralysis with Sodium Nucleinate.*
6. Ehrlich, P. *Nervous Disturbances and Salvarsan Treatment.*
7. Touton. *Supplement to My Article "Practical and Theoretical Value of Arsenobenzol (Ehrlich-Hata '606')."*
8. Loewy, A. *Recent Researches concerning the Physiology of Respiration.*

1. Melchior first mentions the work done by Drs. W. Mayo and Moynihan in bringing this disease before the medical world, proving its frequency and the importance of early diagnosis. The disease is much more common among males, the proportion between the sexes being about 3 to 1. Alcoholism seems to be a contributing, but by no means constant, factor. He takes up the different kinds of duodenal ulcers and their frequency. He finds no apparent relation between the acute duodenal ulcers, such as follow severe burns for instance, and these chronic ulcers of the duodenum. He reviews the symptoms and outlines methods of treatment, reporting several cases. He advises early operation when possible, first making sure of the diagnosis. He considers that prognosis must always be guarded, as even in the mild cases alarming symptoms may at any time occur. [J. L. H.]

Zeitschrift für Klinische Medizin. Bd. 71.

Heft 3–6.

1. Marx, A. *Action of Sodium Butyrate on Young Fasting Dogs, with Remarks on the Doctrine of Diabetic Coma.*
2. Fejes, L., and Kentzler, J. *Pathology of Paroxysmal Hemoglobinuria.*
3. *Roth, N. *Percussion of the Stomach.*
4. Kiralyfi, G. *Tuberculin Anaphylaxis.*
5. Vogel, M. *Hemophilia and Coagulation of the Blood.*
6 and 7. Falk, F. *Clinical and Experimental Investigation on the Excretion of Different Substances through Diseased Lungs.*
8. *Falk, F., and Hesky, O. *Ammonia, Amino-acids and Peptid-Nitrogen in the the Urine during Pregnancy.*
9. *v. Dieballa, G. *I. Further Fate of a Case of Pernicious Anemia Well for Thirteen Years. II. Remission of a Case of Pernicious Anemia at the Onset of Tuberculosis.*
10. Lenmacher, J. *Bacteriological Finding in Epidemic Cerebrospinal Meningitis.*
11. Gudzent and Loewenthal. *Radium and Purin Metabolism.*
12. Foranow, L. *Influence of Radium on Monosodium Urate in the Animal Organism.*
13. Grabley. *Atmospheric Changes in the Presence of Radium.*
14. *Lidsky, A. *Influence of the Thyroid Gland on Blood Clotting.*
15. *Kottman, K. *Fibrin Content of Blood with Reference to Thyroid Function.*
16. *Kottman, K. *Thyroid Gland and Autolysis.*
17. Christen, T. *A New Method in Pulse Diagnosis.*
18. *Wenckebach, H. F. *Exudative and Adhesive Pericarditis.*
19. Hess, W. *Resistance of Blood and Poiseuille's Law.*
20. Magnus-Alsleben, E. *A Case of Leukanemia.*
21. Hertz, R. *The Question of Myeloid Metaplasia of the Spleen.*
22. Saiki, S. *Local Circulation Variation from Active Movement of a Limb.*
23. Ebstein, E. *John Lucas Schönlein's Service to Diagnostic Technic.*
24. Rosenheim, T. *Atony of the Esophagus.*

3. By light percussion of the partly filled stomach, the patient standing, Roth could mark out the greater curvature with considerable certainty as confirmed by orthodiagraph.

8. During pregnancy there is a relative increase in excretion of all forms of nitrogen. The peptid-nitrogen excretion is often greatly increased soon after induced labor, diminishing only gradually thereafter. Alimentary levulosuria and peptid-nitrogen excretion run parallel for the most part during labor.

9. Dieballa reports two cases of primary pernicious anemia, each of which is instructive. The first, a man of fifty, was observed through a typical attack in 1894, in which the blood picture was reduced to 20% hemoglobin, 5,000,000 red corpuscles and a specific gravity of 1,029.5, with typical variation in red cells and leucopenia; he had reticular fundus hemorrhages, nosebleed and diarrhea, and for a week the icterus characteristic of hemolytic conditions in which urobilin alone is found in the urine. A number of medicaments had been tried without success, until salol, 5 gr. a day, was administered with concomitant rapid improvement. This patient remained well, being seen at frequent intervals, until thirteen years later, when he died, not of pernicious anemia, but of disseminated tuberculosis. The blood in the last illness showed 75% hemoglobin, 1.043 specific gravity, 3,080,000 red corpuscles and 2,800 white corpuscles. Post-mortem were found no evidences of pernicious anemia. This case the author regards as having recovered from pernicious anemia.

The second case, even more typical of the primary type of anemia, had been reduced to 28% of hemoglobin and 1,200,000 red corpuscles, when an improvement set in; but it was soon noticed that though the blood continued to improve in quality, the patient became weaker and a rapidly advancing tubercular process was found in the lungs, the patient dying of what proved to be disseminated tuberculosis. Just before death the blood picture showed 70% hemoglobin, 1.050 specific gravity, 3,500,000 red and 6,000 white corpuscles. Gross and histological findings in this case showed evidence of pernicious anemia, i. e., red bone marrow with excess of primitive cell forms of corpuscles, and hemochromatosis of organs. From this case the author argues that whatever the cause of pernicious anemia, it is not that of secondary types, and

suggests that there may even be some antihemolytic effect produced by the advancing tubercular process.

14, 15 and 16 are all concerned with the same work. The conclusions reached may be summarized: Both experimentally on dogs and rabbits and in cases of myxedema and exophthalmic goiter Lidsky shows coagulation of the blood to be slower and less complete in hyper- than hypo-thyroidism.

Fibrin is increased in the blood in myxedema, decreased in exophthalmic goiter and in experimental hyperthyroidism (sometimes three times as much in the latter as in the former).

Theoretical considerations on experimental basis show increased autolysis of proteids in hyperthyroidism.

18. Wenckebach makes remarks on exudative and adhesive pericarditis under three general headings, those under the second including original and important investigation.

(1) On artificial pneumopericardium in exudative pericarditis. The author states that it has been his custom for some time to replace a certain part of the fluid withdrawn from the thorax with sterile air, thereby preventing too sudden rearrangement of intrathoracic organs and impeding the rate of return of fluid. When, therefore, a case of tubercular pericarditis was twice tapped, with prompt return of fluid, and hemorrhage from the lung was caused, air to one half the volume of fluid withdrawn was placed in the pericardial cavity, with amelioration of both symptoms; moreover, this procedure relieved the precordial distress which tapping caused. Symptoms of artificial pneumothorax are unmistakable. An x-ray plate of the condition is appended.

(2) The paradoxical pulse. Study of tracings of heart, radial artery and respiration lead the author to make three classes of causes of this troublesome sign, the first from pressure outside the thorax, and he cites a man who on elevating his chest in respiration caught the subclavian artery between clavicle and first rib, thereby bringing on this condition. The second class has a dynamic origin; normally, the tendency is that there shall be a smaller output of blood from the heart during inspiration than expiration, due to the increased negative pressure in the pleural cavity during inspiration; abnormally, this condition may become apparent in a peripheral vessel in the following conditions: By simple deep breathing, by stenosis of the larynx, by limiting the respiratory surface, by the presence of exudate or enlarged heart, by weakness of cardiac musculature or dilation. He cites three cases of this class; in all, it is diagnostic that the pulse wave is greatest at the onset of expiration. The third class consists of cases caused by mechanical obstruction within the chest, and of these causes adhesive pericarditis is the most common. It is characteristic of the paradoxical pulse of this class that the greatest cardiac output occurs between expiration and inspiration, for at this time alone is such a heart in position to do its best work.

(3) On the diagnosis of adhesive pericarditis. The least important part of the paper. The author considers abnormal chest movements of the greatest importance, if pleural adhesions can be excluded. If the chest moves forward normally, adhesive pericarditis can be denied. The diagnosis of this uncommon condition has assumed a greater importance since the success of the operation of cardiolysis. [J. B. A.]

### ARCHIV FÜR KLINISCHE CHIRURGIE.

BD. 94. HEFT. 1.

1. EICHMEYER, W. *Contributions to the Surgery of the Common and of the Hepatic Bile-Duct, including Anastomoses between the Biliary System and Intestine.* (Conclusion.)
2. ZUPPINGER, H. *Contribution to the Theory of the Typical and the Supracondylar Fracture of the Radius.*
3. FELTEN, R. *Hernia of the Bladder.*
4. *CHOLSOFF, B. N. *The Treatment of Congenital Diverticula of the Bladder, and Their Clinical Significance.*
5. HESSMANN, A. *Massive Dosing (with X-Ray) in Tumors.*
6. HEDDÄUS, A. *Metastatic Pleural Tumor after Primary Papillary Sarcoma of the Cervix Uteri.*
7. SCHMID, H. *Further Report on the Results of the Surgical Treatment of Diffuse Peritonitis.*
8. LEISCHNER, H., AND KÖHLER, R. *Homeoplastic Transplantation of Parathyroid Bodies and of the Thyroid Gland.*
9. TTROW, I. *Echinococcus of the Bones.*

4. Cholsoff presents an elaborate study of congenital diverticula of the bladder, describing their anatomy, clinical picture, diagnosis, course, prognosis and treatment, basing his discussion of the latter on a personal case which he reports at length. His conclusions are as follows:

(*a*) That diverticula of the bladder may be congenital or acquired, the latter being due to long-continued obstruction to evacuation of the bladder.

(*b*) That in congenital diverticula one ureter often opens into the diverticulum.

(*c*) That congenital diverticula are more often single.

(*d*) That they most frequently occur on the posterior wall of the bladder, less often on the lateral walls, most seldom on the anterior wall and the fundus.

(*e*) That the clinical picture in uncomplicated cases is very definite.

(*f*) That on the occurrence of infection, the symptoms of acute or chronic cystitis become prominent. Hydronephrosis, pyelonephritis or pyonephrosis are frequent complications.

(*g*) That diagnosis may most easily be made and established by the cystoscope.

(*h*) That diverticulum of the bladder has an average mortality of 83.1%.

(*i*) That treatment should be directed chiefly to securing free evacuation of the bladder.

(*j*) That to obtain this, the diverticulum must generally be removed.

(*k*) That to do this the peritoneal cavity must usually be opened, though low posterior and lateral diverticula may be removed through the perineum.

(*l*) That when the condition is accompanied by infection, the radical operation must be preceded by suprapubic drainage. [R. M. G.]

## Obituary.

### CHARLES O. BALLOU, M.D.

DR. CHARLES OLNEY BALLOU, who died of pneumonia on Jan. 18, at Providence, R. I., was born in Cumberland, R. I., on June 10, 1830. After graduating from Dudley Academy, in Massachusetts, he taught school for several years in this state and in Rhode Island. In 1850 he went to Detroit, Mich., where he entered the dry goods business, which he later continued at Providence, R. I., where he was married in 1857. In 1861 he enlisted in the Eleventh Rhode Island Volunteer Infantry and served with that command throughout the Civil War. After the war he went into business again, and for some time was engaged in the manufacture of cotton goods. In 1874 he took up the study of medicine, and in 1877 received the degree of M.D. from the Harvard Medical School. Since this time he had practiced medicine at Providence. He was a member of the Rhode Island Medical Society and of the Providence Medical Association.

### F. A. HARRIS, M.D.

DR. FRANCIS AUGUSTINE HARRIS, who died of cerebral hemorrhage on Jan. 18, at Winthrop, Mass., was born in Ashland, Mass., on March 3, 1845. He graduated from the Boston Latin School in 1862, and in 1866 received the degree of A.B. from Harvard College. He then entered

the Harvard Medical School, and after an interruption of three years, during which he taught at the Latin School, received his M.D. degree in 1872. In 1871 he served as a surgical house-officer at the Massachusetts General Hospital, and subsequently studied medicine for a time at Vienna. In 1873 he began the practice of his profession in Boston, and in 1877 was appointed medical examiner for Suffolk County, a position which he held for thirty years. He was a Fellow of The Massachusetts Medical Society. His widow survives him.

## Miscellany.

### MEDICAL POLICY OF THE BOSTON MILK AND BABY HYGIENE ASSOCIATION.

#### PURPOSE.

The purpose of the Milk and Baby Hygiene Association is "to improve the general milk supply, to encourage breast feeding, to provide milk properly modified for babies who cannot be nursed and to furnish advice and teaching in hygiene and the care of babies."

In carrying out these principles the Association intends to supplement and assist and not to duplicate or interfere with the work of private physicians or of hospital clinics or other organizations. Our work is prophylactic, not clinical. We care for well babies. We do not treat sick babies. We invite the hearty co-operation of all physicians and organizations.

#### MEDICAL DIRECTOR.

The management and supervision of all medical matters is in charge of a medical director, who in turn is responsible to the Medical Committee for the principles involved. The medical director has charge of and supervises all matters of hygiene, medical ethics and medical management. The medical director appoints and discharges conference physicians, subject to the approval of the Medical Committee.

The medical director provides for substitutes for conference physicians and stands ready himself to fill vacancies when necessary. He has complete charge of conferences and visits them often enough to keep up an *ésprit du corps* and to see that discipline is maintained.

In conjunction with the Nurses' Committee, the medical director employs and discharges nurses and supervises them during milk-distributing hours.

The medical director assumes responsibility for the proper conduct of classes for girls that may be conducted in high schools or elsewhere, and secures instruction for the fathers in the different stations.

The medical director relates the work of the Association as closely as possible with the various children's clinics of Boston and with organisations similar to the Milk and Baby Hygiene Association in other cities for the purpose of co-operation and mutual benefit.

#### CONFERENCE PHYSICIANS.

Conference physicians are responsible to the medical director and are appointed and discharged by him subject to the approval of the Medical Committee. The conference physicians are in charge of the conferences held in their respective stations. They control the feeding of all babies taking our milk who are not under the supervision of outside physicians. The conference physicians do not write prescriptions.

No proprietary food, as such, is ordered by conference physicians.

#### NURSES.

The nurses are chosen and appointed by the Nurses' Committee. They are responsible to the medical director on medical matters and to the director on administrative matters. One or more nurses are in charge of each station.

They supervise the distribution of the milk and assist the conference physician at the conferences, visit the homes and supplement and elaborate by personal efforts the instructions given by the conference physicians.

They do not take cultures.

They are not allowed to visit babies taking our milk when the child becomes ill and some other nurse is attending.

The nurses are subject to the policy and rules formulated by the Nurses' Committee.

#### MILK STATIONS.

Our milk stations are located as far as possible in distinct districts and near centers of congestion. The milk stations serve as milk dépôts and headquarters for conferences, lectures and other activities.

##### *Milk Distribution.*

The milk is distributed at the stations under the supervision of the station nurse, between eight and nine every morning. We supply clean milk, whole, modified and fat free, barley water and whey at cost.

##### *Milk Supply.*

The milk distributed by the Association comes from farms which are carefully inspected each month by the medical director or his representative.

The methods of transporting the milk, the central receiving, modifying and distributing plant, are under medical and bacteriological supervision. The whole milk, modified milk, fat free milk and whey are pasteurized. The whole and modified milk is inspected and tested in regard to bacterial count and percentages of composition at least once a week. The milk is purchased on contract after bids have been asked on published specifications.

Modified milk may be ordered through our stations for home delivery outside of Wards 1–10 and 12–15.[1] Such orders are stopped auto-

[1] Home deliveries within the wards covered by our stations may be had when the family is unable to send for the milk.

matically after one month unless renewed by a doctor's prescription.

*Conferences.*

One or more conferences are held weekly in each station.

At these conferences the conference physicians instruct the mothers in matters of hygiene and the care of the baby along prophylactic lines, using as far as possible the class method and avoiding duplication of the instructions given in out-patient clinics along clinical lines.

*Lectures.*

Lectures and talks to mothers and fathers are given at each station as frequently as possible.

ACCEPTANCE OF CASES.

Breast-fed babies may be referred to the stations for the supervision and instruction of the mother. Any well baby whose mother is unable to nurse it may be sent to our stations to secure milk and for the instruction of the mother.

Physicians wishing to send cases to the Association are provided with a card on which to state the formula they desire and whether or not they wish to continue to control the feeding of the case.

If the physician wishes to supervise the feeding of the case, the baby and mother may still have the benefit of the instruction and supervision of the conference physician and station nurse.

If the physician does not wish to control the feeding, and in all cases coming to the stations indirectly, the feeding of the baby and instruction of the mother at conferences and in the home is under the supervision of the conference physician and station nurse.

All babies obtaining milk from our stations or attending conferences are registered, but those whose feeding is not under the supervision of the conference physicians are counted separately in our vital statistics.

DISCHARGE OF CASES.

Well babies are continued under our supervision as long as deemed advisable by the medical director.

When a baby under our care becomes ill, it is referred back to the private physician or clinic referring the case to us. A card is sent with the case, stating name, address, station and formula which the baby is then taking. A return postal is attached, to be filled in and returned to the station by attending physician, giving date of discharge, diagnosis and formula advised, or, in case of death, the date, place and cause.

Cases which come to us other than through a private doctor or hospital clinic, and, where there is no family physician, if able to pay for a doctor's services, are given a list of all the conference physicians with their addresses. These cases, if unable to pay for a physician's services, are referred to the nearest hospital clinic or advised to call the district doctor. A case sent to a clinic or private physician becomes the patient of the hospital or physician to whom sent until returned to us.

The above outline of medical policy has been formulated and endorsed by the Medical Committee of the Milk and Baby Hygiene Association.

HENRY I. BOWDITCH, M.D., *Chairman*,
WALTER B. CANNON, M.D.,
JOHN M. CONNOLLY, M.D.,
Mrs. MARY MORTON KEHEW, *Ex-officio*,
WALTER E. KRUESI, *Ex-officio*,
RALPH C. LARRABEE, M.D.,
WILLIAM P. LUCAS, M.D.,
CHARLES W. TOWNSEND, M.D.,
RICHARD M. SMITH, M.D.,
ARTHUR A. HOWARD, M.D., *Medical Director, Committee.*

## NEW YORK ACADEMY OF MEDICINE.

### EDWARD N. GIBBS MEMORIAL PRIZE.

THE New York Academy of Medicine, 17 West 43d Street, New York City, announces the following new conditions of the granting of the Edward N. Gibbs Memorial Prize.

I. The Council of the New York Academy of Medicine is to appoint a permanent committee of award, consisting of five of its members, to be known as the Edward N. Gibbs Prize Fund Committee.

II. The said committee is to have the selection of the candidates and the awarding of the prize.

III. The method of award is as follows:

(1) The committee shall advertise the prospective award at intervals of not less than two years in appropriate medical journals, and otherwise.

(2) Candidates must be physicians of not less than three years' experience since graduation in clinical and laboratory work; must be residents of the United States; and shall furnish the committee with evidence of research already performed and of ability to prosecute the special researches for which the prize is founded.

(3) Such researches may be conducted in any hospital or medical laboratory approved by the committee, wherever it may be situated.

(4) The researches shall comprise original work only in any or all of the following subjects: The causation, pathology and new methods of treatment of diseases of the kidney.

(5) From the applicants the committee shall select the one offering the best credentials as to ability to conduct original investigation, and to him shall be awarded from time to time during the research the income of the prize fund for such time as may have been occupied by the research, providing, however, that the total time shall not exceed three years, and provided that the committee shall at all times retain the power to reject unsatisfactory work from the award. It is understood, moreover, that the expenses of advertising and of publication of the researches be met from the income of the prize fund; and that when no research is forthcoming, the income for the current year be not awarded, but added to the principal of the prize fund.

(6) The completed research shall be presented in the form of a thesis and published under the auspices of the New York Academy of Medicine, bearing title substantially as follows:

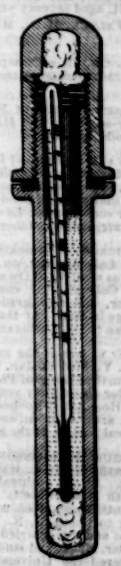
"The Edward N. Gibbs Memorial Prize for Original Research in Diseases of the Kidney awarded through the New York Academy of Medicine. A Thesis upon the ——— of the Kidney by ———, M.D. Published under the direction of the New York Academy of Medicine."

(A brief note should be published with the thesis, setting forth the object of the Memorial Prize.)

It should be understood for all time that it is the fundamental purpose of the donors to promote the study of the diseases of the kidney with the object of relieving human suffering, but as it is impossible to forecast the direction of special scientific research, it should be left within the discretion of the permanent committee of the Academy to modify the details of method of award of the prize in regard to mode of selection of the candidates, should occasion demand in future years.

## AN AUTO-ASEPTIC THERMOMETER CASE.

At a recent meeting of the Association for the Prevention of Tuberculosis, in Washington, D. C., Mr. Emile Berliner presented a simple improvement in tubes or cases for clinical thermometers which makes possible an automatic and at the same time most thorough disinfection of the thermometer after each use.



The improvement consists in a soft rubber or leather washer placed where the top of the tube or case is screwed to its body. This washer seals the case and renders it watertight. Solutions of formaldehyde, carbolic acid, bichloride of mercury, peroxide of hydrogen or other powerful disinfectants are poured into the tube, filling it, say, one half.

When required for use, the thermometer is rinsed off in water, wiped dry, and the temperature is taken; this is repeated afterwards before it is put back into the case. A single shake will then cover the thermometer with the antiseptic fluid and disinfect it.

In using this case the question to be decided is about the kind of antiseptic fluid which should be used. This was brought out in the discussion which followed Mr. Berliner's presentation and which was participated in by Gen. George M. Sternberg, Dr. George M. Kober, Dr. E. C. Schroeder, Dr. G. Lloyd Magruder and Dr. W. C. Gwynn, all of whom agreed upon the undoubted value of Mr. Berliner's conception. Dr. Schroeder favored a 5% carbolic acid solution and Dr. Kober has already undertaken to have experiments made at the Hospital Laboratory of Georgetown University in order to settle the question.

No patent has been taken out on this device.

## MEDICAL MATTERS IN THE PHILIPPINES.

### Leprosy, Beri-beri, Yaws and "606."

With permission, we make the following interesting extracts from a private letter from the Philippines:

"I am just out on a very extensive leper-collecting trip which embraces the entire archipelago and which I hope will result in the transfer to Culion of every known leper in the Philippines. I often wish that you could make another of these trips with me.

"We are having great success with the rice theory as the cause of beri-beri. Since we began the use of unpolished rice the disease has completely disappeared in all public institutions, and similar results have been obtained in Siam and other places where it has been put into effect. You know, of course, that the theory is based upon the fact that the outer portion of the rice grain contains the bulk of the phosphorus and that persons who live on polished rice, which has the outer coating polished away, are deprived of the necessary phosphorus which the human organism demands. It is alleged that beri-beri is nothing more than phosphorus starvation. At Culion alone, the death-rate by eliminating beri-beri dropped from an average of about eighty a month to an average of ten a month, based on the same population.

"You will probably remember the many cases of yaws we saw on the leper trip and particularly the horrible ulcerations and contractions which

we encountered. In the former disease '606' produces almost miraculous cures within a period of ten days, and if the theory is correct that the latter cases are the third stage of yaws, we should get similar results. We will, of course, try this just as soon as a supply of '606' becomes available."

## EXPENDITURES FOR CONSERVATION OF HEALTH.

In a recent address before the City Club of Chicago, Mr. W. A. Evans, health commissioner of that city, presented some data, from statistics of the United States Census Bureau, showing the amount per capita spent in 1908 by American cities for conservation of the public health. Of cities having a population of over 30,000, Cambridge, Mass, made proportionately the highest expenditure for this purpose, 63.6 cents to each inhabitant. Yonkers, N. Y., came next, with 58.1 cents; New York City third, with 54.7; Denver, Colo., fourth, with 48.5, and Boston fifth, with 47.9. On the same rating, Chicago stood at the foot of the list, with a per capita expenditure of only 20.8 cents. This does not mean, however, that Chicago in 1908 had the highest morbidity or mortality rate. The basis on which these figures are computed seems open to obvious delusive conclusions, and it does not follow that the city which ostensibly spends most for so-called health conservation is necessarily the most healthful.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JAN. 14, 1911.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | 1,508 | 373 | Waltham | 7 | 0 |
| Chicago | 720 | 194 | Brookline | 8 | — |
| Philadelphia | — | — | Chicopee | 7 | 2 |
| St. Louis | — | — | Gloucester | — | — |
| Baltimore | — | — | Medford | 4 | — |
| Cleveland | — | — | North Adams | 6 | 1 |
| Buffalo | — | — | Northampton | 11 | 1 |
| Pittsburg | — | — | Beverly | 3 | — |
| Cincinnati | — | — | Revere | 4 | — |
| Milwaukee | — | — | Leominster | 3 | — |
| Washington | — | — | Attleboro | 6 | 2 |
| Providence | — | — | Westfield | 8 | 5 |
| Boston | 229 | 84 | Peabody | — | — |
| Worcester | 51 | 12 | Melrose | 3 | 0 |
| Fall River | 36 | 10 | Hyde Park | 6 | 2 |
| Lowell | 23 | 7 | Woburn | 6 | 1 |
| Cambridge | 26 | 6 | Newburyport | 5 | — |
| New Bedford | 34 | 14 | Gardner | 10 | 3 |
| Lynn | 27 | 3 | Marlboro | — | — |
| Springfield | 11 | 4 | Clinton | 3 | — |
| Lawrence | 29 | 13 | Milford | 2 | — |
| Somerville | 26 | 4 | Adams | 4 | 2 |
| Holyoke | 34 | 6 | Framingham | — | — |
| Brockton | 10 | 3 | Weymouth | — | — |
| Malden | 8 | — | Watertown | 3 | 2 |
| Haverhill | 13 | 4 | Southbridge | 4 | 1 |
| Salem | 13 | 6 | Plymouth | — | — |
| Newton | 6 | — | Webster | 3 | 2 |
| Fitchburg | — | — | Methuen | 2 | — |
| Taunton | 11 | 1 | Wakefield | 3 | — |
| Everett | 9 | 2 | Arlington | 3 | 0 |
| Quincy | 7 | 2 | Greenfield | 1 | — |
| Chelsea | 21 | 4 | Winthrop | — | — |
| Pittsfield | 8 | 2 | | | |

## SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—The annual meeting of the society will be held in Sprague Hall, Medical Library Building, on Monday, Jan. 30, 1911, at 8.15 P.M. Program: "The Clinical and Scientific Significance of Dreams and Dream-Symbolism, with Special Reference to the Work of Freud," Dr. James J. Putnam. "Men, Manners, and Medicine," Dr. Robert M. Green. The annual business meeting will be held at 9 P.M. Members of the Suffolk District Medical Society are cordially invited to attend.

DANIEL F. JONES, M.D., *Secretary*,
195 Beacon St.

THE NORFOLK DISTRICT MEDICAL SOCIETY.—A regular meeting of the society will be held at Masonic Temple, 171 Warren Street, Roxbury, Tuesday, Jan. 31, at 8 o'clock. Telephone Roxbury 2275S. Business. Communications: "Institutional and Non-Institutional Treatment of Inebriety," Irwin H. Neff, M.D. "After-Treatment and the Out-Patient Department," John A. Horgan, M.D. "General Discussion and Emmanuel Methods," Samuel McComb, A.M., D.D. Discussion by H. Lincoln Chase, M.D., Fredrick L. Taylor, M.D. Refreshments after the meeting.

BRADFORD KENT, M.D., *Secretary*,
798 Blue Hill Ave., Dorchester.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.—The spring meeting will be held in Sprague Hall, Medical Library, Boston, on Wednesday, Feb. 1, 1911, at 1 o'clock. The following papers will be read and discussed: 1. "The Function of the Medical Examiner," George Burgess Magrath, M.D., Medical Examiner, of Boston. 2. "Points of Medico-Legal Interest in the Glover Murder Case," George L. West, M.D., Medical Examiner, of Newton. 3. "Oil of Cedar Poisoning," Everett A. Bates, M.D., Medical Examiner, of Springfield. 4. "The Howard Murder Case," Garry de N. Hough, M.D., Medical Examiner, of New Bedford.

OLIVER H. HOWE, M.D., *Recording Secretary*,
Cohasset.

## RECENT DEATHS.

HUTCHINSON, EDWIN DARIUS, M.D., M.M.S.S., died in Westfield, Jan. 19, 1911, aged seventy years.

BLAIR, ARTHUR WALTER, M.D., M.M.S.S., died at Duxbury, Jan. 18, 1911.

DR. NATHANIEL R. CHACE, of Newport, R. I., died in that city, on Jan. 3. He graduated from the Hahnemann Medical College in 1872.

DR. JOHN WOODWARD GOULD, of Newark, N. J., died on Jan. 16, in his seventy-second year. He was graduated from the Albany Medical College in 1860.

DR. CHARLES EDWARD CLARK, of Lynn, Mass., who died last week of heart disease, at Passaic, N. J., was born in Auburn, Me., in 1850. He received the degree of A.B. from Bowdoin in 1871, and that of M.D. from Harvard in 1877. He practised medicine for some time at Lynn, but retired several years ago. He was married last October.

DR. EUGENE P. HICKOK, of Brooklyn, N. Y., died at his country residence, on Lake George, on Jan. 19, at the age of fifty-one years. He was a native of Owatonna, Minn., and was educated at Carlton College. He commenced his medical studies at Ann Arbor, and was graduated from the [Long Island Medical College in 1890. At the time of his death he was attending physician to the Lutheran Hospital, Brooklyn.

DR. WILLIAM S. ELY, one of the most prominent physicians of Rochester, N. Y., died on Jan. 15, after a long illness. He was graduated from the College of Physicians and Surgeons, New York, 1867, and for about forty years had been attending physician to the City Hospital of Rochester. During the Civil War he served as an army surgeon, and a few years ago was President of the Medical Society of the State of New York.

DR. EDWARD DARIUS HUTCHINSON, who died last week of pneumonia, at Westfield, Mass., was born in Livermore, Me., on Sept. 20, 1840. At the outbreak of the Civil War he enlisted in the Seventh Massachusetts Regiment and served with that command until March, 1863, when he was discharged for disability. Going to Cortland, N. Y., he engaged in the boot and shoe business and was married there in 1866. In 1867 he went to Bridgewater, Mass., and studied dentistry there for a time, but later entered the University of Vermont, from which he received the degree of M.D. in 1875. For some time he practised medicine at Huntington, Mass., but in 1876 settled at Westfield. For many years he had been on the consulting staff of the Noble Hospital in that city. He was a Fellow of The Massachusetts Medical Society. He is survived by his widow and by three brothers.

# Original Articles.

## REFLEX DISTURBANCES.

PAPERS PRESENTED AT THE MEETING OF THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK, MONDAY, DEC. 19, 1910.

### I. REFLEXES IN SURGICAL DIAGNOSIS.

BY ROBERT T. MORRIS, M.D.,

*Professor of Surgery at the New York Post-Graduate Medical School and Hospital.*

WE are past the pivotal point and have reached the law of diminishing returns in diagnosis, when specialism has arrived at the point where the neurologist fails to recognise organic causes for surgical symptoms, and when, on the other hand, the surgeon fails to note general conditions which give symptoms simulating those of surgical conditions.

The time has arrived when we must go back to the development of the general diagnostician as the most important factor in the medicine of to-day.

Take, for example, ulcer of the stomach. I have, in common with other surgeons, cases from all parts of the country sent for operation, that are not cases for operation at all. Some of the cases sent in with the diagnosis of ulcer of the stomach are really cases of that sort. Others are cases of gallstones, or bile tract adhesions, or fibroid degeneration of the appendix, or early pregnancy, with symptoms like those of some cases of ulcer of the stomach. Others are cases of eyestrain in which the chief demonstration is in the gastric region. Still others are cases of psychosis, or psychoneurosis, with symptoms demonstrated in the gastric region.

As another example of a group of cases often representing reflex disturbance, let us take flexions of the uterus. A very small percentage is due to actual anatomic or embryonic defect, and needing surgical attention. Another percentage of flexions of the uterus is dependent upon spasm which belongs to the neurotic habit, and requires little or no local surgery. The largest group of all seems to include those cases of spasmodic flexion which occur in response to some peripheral irritation at a distance, and which may be distinctly surgical so far as demanding relief from the distant peripheral irritation is concerned. These patients in times past, and even at the present time, are all in danger of being treated indiscriminately for the local condition of flexion, without regard for the underlying causative factors, for a condition which generally belongs in the same class with a sneeze. Reduced to its simplest terms as a proposition, there is not much real difference between a sneeze and an ordinary flexion of the uterus.

Many cases of neuralgia, treated medically, belong distinctly in the surgical class. We often enough have lumbago, or neuralgia of the sciatic nerve, due to an enlarged prostate gland, distended seminal vesicles, pelvic adhesions and to septic or mechanical disturbance of the uterus and adnexa. Cases of trigeminal neuralgia are commonly treated on medical diagnosis only, and patients often tell me they have not even been questioned, by neurologists of standing, relative to peripheral irritations. I recently operated upon a patient who had suffered intensely from trigeminal neuralgia, and who had been given alcohol injections by a most competent surgeon interested in that subject, but who had not examined her pelvis at all. So intense was her suffering that at the time of the last alcohol injection she prepared a fatal dose of morphine in a glass of water to be taken just before her anesthesia. She wished to commit suicide, but to avoid disgrace to the family by having it appear that she had died from the influence of the anesthesia. The reason why she did not take the dose was because at the last moment the anesthetist refused to allow her the glass of water. When she came under my care a little later, and a large ovarian cyst was removed, her neuralgia disappeared promptly, excepting for an occasional twinge of the supra-orbital nerve at times when the barometer is low. In this case the ovarian cyst was the precipitating factor in a patient no doubt predisposed to trigeminal neuralgia.

In another case, a somewhat illiterate old lady with a competence allowing her to consult good authorities informed me that she had suffered terribly from "neurology," as she put it, and I found her statement quite true at its literal value. In this case I excised a portion of the inferior dental nerve, giving relief for about a year. On the return of the neuralgia I did what should have been done in the first place, — sent her to a competent ophthalmologist to determine if eyestrain could be a peripheral factor in the case. He has apparently cured her neuralgia permanently by correcting eye muscle imbalance.

The subject as a whole is too large for presentation in this short paper, and I have brought forward salient points as they appear to the surgeon for purposes of discussion.

In closing the discussion, Dr. Morris said that on boiling down the remarks of various speakers he had obtained two chief lumps of nutritious material. One was from Dr. Fisher, who said that the trouble with the profession lay in confusing the terms "reflex" and "referred." Dr. Morris said that he himself had confused the terms and had used the term "reflex symptoms" in place of "referred symptoms," and he felt that perhaps confusing nomenclature represented the crux of the difference of opinion between surgeons and neurologists, although patients sent in for operation had often not been questioned at all relative to peripheral irritators. The other lump was the fact impressed by Dr. Woodward that the diagnostician needs to be a good editor. He must get together all sorts of testimony from various sources, and then edit the testimony.

## II. DISTURBANCES DEPENDENT ON EYE-STRAIN.

BY ELLICE M. ALGER, M.D.,

*Adjunct Professor of Ophthalmology, New York Post-Graduate Medical School.*

IT is an old saying that the eye is but an expanded portion of the brain, but we seldom stop to think how complicated sight is or how large a portion of the brain is devoted to its perfection. Not only must the retina be exquisitely sensitive to light, but the refractive media must be so calculated that exact images may be formed on that retina. Furthermore, that perfect image must be formed on one particular spot in the retina of each eye, and the brain must combine the two sensations in order to form the visual judgments which we call seeing. The refractive media must be so capable of change that the retinal image may be kept distinct whether the object be far or near, and the muscles of the eyes so coördinated that no matter where we look, both maculæ may be trained constantly on the object of regard. This clearness of vision and coördination of the two eyes is secured by the joint action of fourteen separate muscles. So necessary and so difficult is the function of vision that four of the twelve great cranial nerves are devoted exclusively to it. Every abnormality of nerve or muscle, no matter how small, either throws the visual machinery entirely out of gear or makes the task of coördination more difficult. When we stop to think that most of us use our eyes almost constantly during our waking period, and that many tasks involve a continuous strain for hours at a time, we begin to understand why vision necessitates expenditures of nerve and muscle energy beyond any other function. And when we further consider the large area of brain devoted to vision, and the very close relationship anatomically between the visual centers and other centers, it need not seem strange that what we rather loosely term eyestrain may exercise a profound and varied influence on those other functions.

We say that a patient is suffering from eyestrain when his eyes are compelled to do work which is beyond their physiological capacity. Unfortunately we have no exact standards for measuring this capacity, only a standard of averages. We know, for instance, that the average patient can read letters of a given size at a given distance, but we find many whose acuteness of vision is far beyond the average. In the same way, we have an average ability to focus near objects which is greatest in youth and diminishes regularly with age, but this power varies enormously even in individuals of the same age.

We are still worse off when it comes to measuring the equally important element of endurance. Just as the strongest man is seldom the most enduring, so the optically perfect eye may be absolutely incapable of enduring continuous hard work.

It is, therefore, perfectly possible to strain even normal healthy eyes by overuse, especially under unfavorable conditions and in lowered health, but the chief strain comes from the efforts of the abnormal eye to compensate for optical defects by increased muscular exertion. A patient may have hyperopia or astigmatism or a latent squint, but if he can compensate for them easily they can hardly be considered pathological, but if this compensation requires an undue expenditure of energy, whether nervous or muscular, eyestrain may be said to be present.

We have, therefore, to deal in each case with an individual problem, and the determination of the exact point where the physiological passes into the pathological depends not only on a proper estimate of any optical defects present but also on a careful consideration of the patient himself, his age, his health, his temperament and the conditions under which his eyes are generally used. It must always be borne in mind that eyestrain is not primarily due to the optical defects themselves, but rather results from the fatigue of overcoming them. Paradoxical as it may seem, therefore, eyestrain is much more apt to accompany good vision than poor. The patient who by straining can see distinctly is under a constant temptation to strain and is much more apt to manifest symptoms than one who has found that he cannot see well no matter how hard he may try. I have seen more than one failure to relieve eyestrain because the chief attention was paid to the bad eye which the patient did not use, while the symptoms came from the good one which he was overusing.

There are at least three distinct types of fatigue symptom, the muscular, the nervous and the psychic. First and most common are the symptoms which are purely muscular. The ciliary muscle, for instance, when tired, does not act smoothly, but overcontracts and overrelaxes, so that vision may be at one instant sharp and clear and the next very indistinct. In the same way fatigue of an extrinsic muscle may cause diplopia. This type of fatigue also causes pain localized in the eyes themselves, but both fatigue and pain may be reflected back along the nerves of sensation and cause sleepiness or depression or headache or neuralgia. In the effort to supply additional stimulation to tired ocular muscles other muscles whose centers adjoin are stimulated and we commonly see screwing of the brows and lids, and less commonly spasmodic contraction of muscles of the face and neck. When this excessive innervation can no longer be maintained, not only does vision fail for the time, but the individual is subject to all the consequences which extreme fatigue of any kind produce on him. Until he has had time to recuperate his stock of nerve power, he may be unable to keep awake or he may be too tired to sleep. He may be too tired to eat or may be entirely unable to digest the food he has eaten. And so on. Just how far we can go in this direction we cannot tell definitely because individual variations are so great, but there seems to be no question that the eyestrain compelled by continuous close work, for instance, may in susceptible individuals develop many motor or secretory anomalies.

Then we must not forget the psychic side of the question. The patient with an astigmatism, for instance, sees all objects more or less distorted and is under the constant necessity of performing a series of mental judgments as to the size and shape of objects. Instead of reading word by word or even phrase by phrase, as most of us do, he often has to read letter by letter. Like a proof reader, he has to devote so close a concentration on the form that the meaning escapes him. Every one now admits this as an important factor in the problem of the backward school child, but it is equally applicable to many an adult who is stupid or apathetic or irritable or easily exhausted. Unless he recuperates nerve and muscle energy very rapidly he is on the verge of nervous exhaustion all the time. The relationship between eyestrain and some of the functional nervous conditions has never been properly studied and would well repay investigation.

In demonstration of this theory of eyestrain we cannot expect the absolute proof that we require in an organic disease of germ origin. To be sure, we can create some of the commoner conditions, such as headache, by creating with glasses an artificial eyestrain; but we often fail because of the enormous variations in the individual's susceptibility to strain and his ability to compensate for it. Even the effects of the same strain on the same individual will vary from time to time with his bodily vigor and the number of other demands on his muscular and nervous energy. For instance, I present several pairs of glasses which will create in you certain types of strain, but they will not affect you all alike and perhaps many of you not at all; but even a momentary use of them will give you an idea of the predicament of the individual who has to cope with this strain throughout his waking hours. All the evidence is, therefore, clinical and as such must be very closely scrutinized. A whole series of cases in which relief of definite symptoms, such as headache, followed correction of eyestrain would be generally accepted as showing a relationship between the two. Even a single case in which definite symptoms are relieved by eyeglasses and recur when they are left off would be worthy of note if we could more definitely exclude the therapeutic influence of suggestion. This possibility should never be forgotten, especially in the large class of neurasthenics and hysterics. Examination of the eyes suggests to them a novel and hopeful explanation of their condition, and, with the mental and physical effects of cycloplegia and the routine of impressive and mysterious instruments is capable of producing a very powerful type of suggestive therapeutics. In no other way can we account for the occasional happy effects of glasses which through some blunder actually increase the strain they were intended to lessen.

I have given you a very brief explanation of the theory of eyestrain; let me now suggest with equal brevity a few of its very numerous practical applications. There are, of course, to the close observer many external indications of eyestrain, such as blinking and screwing of the lids, the formation of abnormal wrinkles, the elevation or depression of an eyebrow, the holding the head in abnormal positions, as well as many chronic inflammatory conditions of the lids and conjunctiva. But there are many other symptoms which result sometimes from eyestrain and sometimes from other sources of reflex irritation, and we can make a diagnosis only by a process of exclusion, taking the most probable cause first. For instance, take the symptom headache. It is generally admitted to-day that eyestrain is the commonest cause of chronic headache, and yet there are innumerable other possible causes. Examination of the eyes should be one of the first procedures because the eye is such a probable cause and because it takes so short a time to exclude it. It can easily be determined in a few days' time not by finding an optical error, for that can always be found and proves nothing, but by the actual therapeutic result of treatment. It would take a much longer time to find out whether the headache came from a pelvic abnormality or an autotoxemia. It may also be a question of expediency. Many people, for instance, have headache after an illness which has impaired temporarily their vitality, but the ache itself may actually occur from strain of a weak ciliary muscle and we can relieve this strain by glasses in very much less time than we can restore the muscular strength.

I wish also to draw your attention to a number of common conditions in which the eyes are not by any means undisputed factors. For instance, in migraine or sick headache the usual teaching is that the eyes are not factors at all, the symptoms being due to vascular changes in the brain of an individual who inherits an unstable nervous equilibrium and is also guilty of autotoxemia. Read any of the standard textbooks and you will be struck with the fact that the writers have little to offer and are profoundly pessimistic, both as to patient and prognosis.

Examination of the eyes is almost the only hopeful possibility. Every one of the individual symptoms of migraine are seen over and over again in eyestrain cases, and, so far as my own experience goes, and it includes a great many cases of typical migraine, relief is the rule and not the exception. I do not say they are cured, for I presume the hereditary instability is still there, but some of them never have any attacks at all and others only an occasional one and all without having to practice any special self-denial either in work or play. I am well aware that many ophthalmologists disbelieve entirely in the association of migraine and eyestrain, and there are, of course, many cases in which other factors predominate, but in my own experience complete failures have been surprisingly few.

There is another large class of patients in which I think functional insufficiency of the eyes plays a far more important part than is generally believed. We apply the indefinite term "neurasthenia" to a multitude of people whose chief symptoms are muscular and nervous irritability

and fatigue manifested in many ways. There is no question at all that in many of them eye symptoms exist which are distinctly secondary to the neurasthenia; symptoms which can be relieved gradually by improvement of the general health, but which disappear much more rapidly when intelligent eye treatment is added. But the question is much wider than this. Some of these neurasthenics are doubtless born unstable, but many more have instability forced upon them. In many of them eyestrain simply plays the rôle of the last straw, but in many others it may be one of the basal conditions. Be that as it may, there is no question that an intelligent eye treatment will relieve many of the neurasthenic's most distressing symptoms, though I am also aware that some of this benefit is the result of suggestion. I am sure that in these cases which are very often simple fatigue neuroses we spend all too much time in hunting for fatigue fields, color inversions, and the like, and all too little on far more essential details.

When a woman of any age between thirty-five and fifty comes to us complaining that she has headaches, that she is tired and nervous and depressed, it immediately occurs to us, as it already has to her, that this is the period popularly called the change of life when such sensations must be expected and endured as best they may. In men of the same age we speak learnedly of uric acid, gout, intestinal autotoxemia; warn against the pleasures of the table, and perhaps prescribe sour milk. But we should always bear in mind that this same age in both sexes marks the onset of the great eye change, presbyopia, which simply means that even the normal individual's accommodative power is approaching the vanishing point, and that ordinary daily tasks are performed with great though perhaps unconscious effort. Many of the symptoms so common at this age we should recognize at once as possibly being due to eyestrain. If time permitted I could give you clinical reasons for believing that the eyes may be the cause, in some cases at least, of functional anomalies of the stomach and intestines, such as nausea and vomiting, of occasional cases of neuralgia and reflex abdominal pain, of some cases of wry neck and spinal curvature of the lateral type. It would be interesting also to say something of differential diagnosis and methods of treatment, but this, too, time forbids. Suffice it to say that success depends on at least three factors — the skill of the physician in making his provisional diagnosis, the skill of the oculist in correcting errors, and upon the intelligence and tractability of the patient. In all three there is room for infinite advancement.

## III. REFLEXES AND REFLEX NEUROSES FROM THE UPPER AIR TRACT. (INCLUDING THE NOSE AND PHARYNX.)

BY W. SOHIER BRYANT, A.M., M.D., NEW YORK.

NORMAL automatic reaction to stimulation constitutes a reflex. The impulse enters by a centripetal route and passes out centrifugally. Sneezing and coughing are normal reflex actions.

Abnormal automatic reaction to stimulation constitutes a reflex neurosis, or, in other words, a pathological reflex. The term "reflex neurosis" includes all circulatory, secretory and trophic reflex disturbances and referred sensations, sensory and motor.

More than two hundred and forty-seven different reflexes and reflex neurotic symptoms have been recorded as emanating from some part of the upper air tract, which includes forty-one distinct anatomical structures — the nose with its sixteen parts, the ten parts of the sinuses, the uvula, the velum palati on both sides, the tonsils, both sides of the pharyngeal tonsil, the pharyngeal bursa, the two sides of the fossa of Rosenmüller, two vaults, the two lateral tracks above and below the palate. From any of these parts reflex disturbances may originate. The above-mentioned reflex manifestations are due to at least two causes — local inflammatory or structural conditions. Each stimulation may travel over at least two distinct nerve routes.

Multiplying these two hundred and forty-seven symptoms by ten of the anatomical structures (or approximately a quarter of the number of parts), by the two causes, and by two nerve routes, — $247 \times 10 \times 2 \times 2$, — as a conservative estimate we find 9,880 different manifestations from the upper air tract. The reflexes and reflex neurotic symptoms from the nose alone number more than two hundred and twenty, and these effects of a common stimulation act in twenty-four different anatomical groups — the nose itself, the ear, the eye, brain, the head in general, the pharynx, larynx, trachea, esophagus, neck, heart, lungs, parieties of the thorax and abdomen, the stomach, intestines, gall bladder, sexual organs, the genito-urinary organs, integument, the muscular and nervous systems in general, the excretory and internal secretory glands, and the circulation.

The cause of the reflex neurosis is a diseased condition of one or more parts of the nerve structures through which the stimulus passes. Reflex neuroses in general may be divided into two large groups, simple and complex.

1. The group of simple reflex neuroses includes all forms of exaggerated reaction to normal or non-pathological stimulation. The paroxysmal sneeze produced by smelling a flower, the cough induced by inhaling fresh air, and the vomiting occasioned by an attempt to swallow a hard object, such as a pill — these are simple reflex neuroses.

The distinguishing characteristic of this group is the hyperesthetic condition of the part stimulated, or the abnormally intense reaction to a normal stimulus. Reflex neuroses do not, therefore, occur in the normal individual, for the primary condition of hyperesthesia in the part stimulated is not present. Hay fever, rose cold, the paroxysmal cough and sneeze are typical examples of simple reflex neuroses from the upper air tract.

2. The group of complex reflex neuroses includes all those symptoms produced by abnormal stimuli, by hyperesthesia of the nerve endings and by disease in the nerve tract and nerve

centers through which the stimulation passes. A neurosis may be produced by any one or all of these conditions in combination; but, owing to the complex and variable nature of the components, it is not possible to reproduce the complex reflex neuroses uniformly by experiment. Asthma, asthenopia, many forms of headache, epilepsy and aprosexia are a few of the many complex symptoms that may originate from some part of the upper air tract. Typical examples are:

(*a*) Headache or face-ache excited by intranasal pressure. The weakened condition of the nerve center through which the impulse travels causes the abnormal stimulation to be referred by irradiation to a healthy area.

(*b*) An asthmatic paroxysm caused by titillation of the nasopharynx with a cotton applicator. This abnormal stimulation of a hypersensitive area causes a violent reaction in the pulmonary apparatus on account of the pathological condition of the nerve centers.

(*c*) An epileptic seizure induced by intranasal pressure with a probe. Here the slight, abnormal stimulus causes a violent psychomotor-sensory paroxysm, which is produced because of the pathological condition of the nerve centers.

Other reflex neuroses, such as cardiac and uterine pains, the demonstration of which is more difficult, may also be attributed to the upper air tract.

*Etiology.* — Simple reflex neuroses, those of the first group, are caused by repeated or prolonged stimulation carried to a point of nervous exhaustion which produces hyperesthesia. Hyperesthesia is the cumulative result of the contact of intranasal surfaces and of irritating dust, vitiated air, too great and too rapid changes in the humidity and temperature of respired air.

Complex reflex neuroses, those of the second group, depend upon structural and peripheral changes which cause an abnormal degree of nerve stimulation. For example, a hypertrophic condition of the nasal mucosa, together with a state of lessened resistance of the nerve centers, as well as a diseased condition of the nerve path, leads to pathological reflex action. A neurotic tendency is usually the fundamental, predisposing cause.

*Diagnosis.* — Simple reflex neuroses can be diagnosed by experimentally inducing a paroxysm. This is done by carefully stimulating every suspected hypersensitive part with a cotton applicator until the active one is discovered and the reflex phenomenon is produced. If this positive method does not determine the diagnosis, a negative one may be employed. Cocainization of hyperesthetic areas during a reflex paroxysm will arrest the attack and establish the diagnosis.

In complex cases, as a rule, a paroxysm cannot be induced experimentally. If in such cases the cocainization of hyperesthetic areas arrests the paroxysm, the origin of the attack is indicated. But if the attack is not arrested in this way, diagnosis can be determined only through the treatment of local abnormalities. When these have been corrected and there is no recurrence of the paroxysm, the probability is that the character of the attack was reflex, and it is safe to assume that the reflex neurosis has been arrested by the removal of the peripheral factor.

In cases of neuroses which do not yield to other treatment, and the origin of which has not been found, a diagnosis of reflex action from the upper air tract is justifiable, and treatment of the manifestation should be undertaken on that basis.

The differential diagnosis between reflex neuroses and toxic effects from infection of the upper air tract is sometimes extremely difficult to determine because of the similarity in the character of the irritations. By removing the peripheral irritation, the seat of infection may also be removed. I believe we are justified in calling the phenomenon a "reflex neurosis" when the removal of pressure under local anesthesia immediately checks a paroxysm, because the excision of the toxic focus cannot produce so rapid an effect.

*Treatment.* — Elimination of the peripheral exciting cause, i. e., the hyperesthetic area, must be the first consideration in treatment, because the nerve path is less amenable and the fundamental neurotic tendency is still more resistant to treatment. On the other hand, it is always possible to remove the peripheral factor. In acute conditions, the hyperesthesia yields to soothing, depletent applications. In chronic conditions, resection is preferable to cauterization because the good effects are permanent by the first method and may not always be obtained by the second.

*Prognosis.* — The prognosis for permanent relief from attacks is good when the peripheral factor has been removed. (In very nervous, neurotic patients, similar or different reflex neuroses occasionally appear from other anatomical parts. These symptoms in turn will yield to appropriate treatment.)

*The nose, the peripheral organ of the sympathetic nervous system.* — Reflexes and reflex neuroses emanating from the upper air tract are of greater variety and importance than those from any other region. This is explained by the fact that the nerve supply of the upper air tract, and especially that of the nose, is largely sympathetic in character. In 1842, Bidder and Volkmann [1] stated that they had counted in the nose twenty times as many sympathetic nerve fibers as cerebrospinal. The sympathetic nerve supply of the nose is, in fact, more abundant than that of any other superficial organ; hence the response from the nose is fundamentally somatic in character. For all these reasons I believe we are justified in calling the nose the peripheral organ of the sympathetic nervous system.

Compared with other sense organs, the nose, so far as its reflex action is concerned, is of primary importance. Digestive and metabolic disturbances from improper diet have an intense influence upon the organ. Sudden changes from hot and dry to cold, damp air and back again

[1] "Die Selbständigkeit des sympatischen Nervensystems durch anatomische Untersuchungen nachgewiesen," Leipsic.

leave their ill-effects upon the nose. The infected dust, poisonous gases and the smoke of civilized communities are factors that ceaselessly exert a baneful influence upon the nasal mucosa. Mental strain and emotional excitement affect the nose unfavorably. Eyestrain as a cause of reflex neuroses takes a secondary place in comparison with nose-strain: the first is intermittent and voluntary; the latter is constant and involuntary.

The human nose and its nerve supply are in a state of degeneration. Dahl and Müller [2] have shown that in man the sphenopalatine ganglion which largely supplies the nose is a very variable structure. When compared with that of domestic animals it shows marked degeneration. The extraordinary susceptibility of the nose to pathological reflex action is undoubtedly to be attributed to its constant and abnormal irritation as well as to the degenerative and consequently unstable tendency of its nerve supply.

The reflexes and reflex neuroses emanating from the pharynx in number and significance are second only to those arising from the nose. From the following lists a realization will be gained of the great variety and vital importance of reflexes and reflex neurotic symptoms from the upper air tract, including both the nose and the pharynx.

### I. REFLEXES AND REFLEX SYMPTOMS FROM THE PHARYNX.

#### ACTING IN PHARYNX.

*Circulatory:* Congestion of mucosa, closure of pharyngeal mouth of Eustachian tube by congestion of mucosa, anemia of mucosa, opening of pharyngeal mouth of Eustachian tube by anemia of mucosa.

*Trophic and secretory:* Hypersecretion of mucous membrane, hyposecretion of mucous membrane, hyperfluid secretion of mucous membrane, hypofluid secretion of mucous membrane, hyperfibrous secretion of mucous membrane, hypertrophy of mucosa, atrophic changes of mucosa, hypertrophy of pharyngeal pituitary, atrophy of pharyngeal pituitary, stimulation of pharyngeal pituitary, inhibition of pharyngeal pituitary.

*Motor:* Parestaltic movement of pharyngeal muscles (swallowing), antiparestaltic movement of pharyngeal muscles (regurgitation), muscular closure of pharyngeal mouth of Eustachian tube, muscular opening of pharyngeal mouth of Eustachian tube, contraction of palate muscles, spasmodic movement of palate muscles, contraction of pharyngeal muscles, spasmodic movement of pharyngeal muscles, spasm of the glottis.

#### ACTING IN NOSE.

*Circulatory:* Congestion of mucosa, sagging turbinates, swelling of turbinates from congestion and stoppage of nose, contraction of lumen from engorgement of mucous lining, obstructed nasal breathing, edema of mucous lining, anemia of mucosa, contraction of turbinates, shrinkage of turbinates from anemia of nose, dilatation of lumen of nasal fossæ from shrinkage of mucous lining.

*Sensory:* Feeling of pressure in sinuses from intranasal pressure, pains referred to sinuses, nose-ache.

*Trophic and secretory:* Hypersecretion of nasal mucosa, rhinorrhea, hyposecretion of nasal mucosa, dryness of mucosa, hyperfluid secretion, hyperviscid secretion, hypermembranous secretion, vasomotor rhinitis, hay fever, rose cold, hypertrophy of mucosa, atrophy of mucosa.

[2] "Die Beteilung des sympatischen Nervensystems an der Kopfinnervation." Deut. Arch. für klin. Med., Leipsic, 1910, pp. 49–107.

#### ACTING IN EAR.

*Circulatory:* Congestion, anemia, occlusion of Eustachian tube.

*Sensory:* Pain in ear, pain in front of ear, pain in mastoid region, tinnitus (many kinds), vertigo.

*Motor:* Twitching sensation in ear, tonic and clonic contraction of internal muscles of ear.

*Trophic:* Hypertrophic changes, atrophic changes, otosclerosis, catarrhal conditions.

#### ACTING IN EYE.

Lacrimation, eye-ache, soreness of orbit, dilatation of pupils, contraction of pupils, asymmetry of pupils, errors of accommodation, ciliary spasm, functional disturbances of retina from dilatation of uvea, extreme vascularity of ciliary body causing disturbances of pigment layer of retina, asthenopia (weak vision).

#### ACTING IN BRAIN.

*Circulatory:* Congestion, anemia.

*Functional:* Nightmare, failure of memory, diminution of psychic energy, aprosexia, unconsciousness.

#### ACTING IN HEAD.

*Sensory:* Forehead headache, temporal headache, occipital headache, vertex headache, stuffy headache, chronic headache, face-ache, trifacial neuralgia, toothache (upper), toothache (lower).

*Trophic and secretory:* Nausea, hypertrophy of cerebral pituitary, atrophy of cerebral pituitary, stimulation of cerebral pituitary, inhibition of cerebral pituitary, trophic disturbances of scalp (alopecia).

#### ACTING IN THROAT AND NECK.

*Larynx:* Weak voice, hoarseness, aphonia, soreness of larynx and trachea, discomfort referred to anterior region of larynx, congestion of larynx, partial paralysis of larynx, laryngeal spasm, laryngeal vertigo.

*Neck:* Muscular tenderness, muscular pains, pain behind ramus of jaw, pain under jaw, pain extending down neck along sternocleido-mastoid, throatache, discomfort below hyoid bone, discomfort referred to anterior border of sternocleido-mastoid, nerve tenderness, cervical neuralgia, torticollis, rigidity of head and neck, spasmodic movement of head and neck, spastic torticollis, globus, choking sensations.

*Thyroid:* Hyperthyroidism, exophthalmic goitre, hypothyroidism, myxedema, hypertrophy, atrophy.

*Thymus:* Stimulation of thymus, inhibition of thymus, hypertrophy of thymus, atrophy of thymus.

*Carotid gland:* Stimulation of carotid, inhibition of carotid, hypertrophy of carotid, atrophy of carotid.

*Esophagus:* Aerophagia.

#### ACTING IN THORAX.

*Heart:* Rapid pulse, tachycardia, irregular heart action, intermittent pulse, cardialgia.

*Lungs:* Catarrh of air passages, bronchitis, asthma, forced inspiration.

*Parieties:* Muscular pains, pain along sternum, pain between scapulæ, intercostal neuralgia, other thoracic neuralgias.

#### ACTING IN ABDOMEN AND PELVIS.

*Stomach and intestines:* Gastric pain, digestive disturbances, gastric crisis in smokers, gastro-intestinal disturbances, vomiting.

*Parieties:* Muscular pains, lumbar pains, neuralgia.

#### GENERAL REFLEX ACTION.

*Co-ordinate:* Acceleration of respiration, retardation of respiration, cough, paroxysmal cough, sneeze, paroxysmal sneeze.

*General:* Habit chorea, pains in bones, "rheumatic" pain and tenderness, sciatica.

### II. REFLEXES AND REFLEX SYMPTOMS FROM THE NOSE.

#### ACTING IN NOSE.

*Circulatory:* Congestion of mucosa, sagging turbinates, contraction of lumen from engorgement of mucous

lining, obstructed nasal breathing, edema of mucous lining, anemia of mucosa, contraction of turbinates, dilatation of lumen of nasal fossæ by shrinkage of mucous lining.

*Sensory:* Feeling of pressure in sinuses from intranasal pressure, pains referred to sinuses, nose-ache.

*Trophic and secretory:* Hypersecretion of nasal mucosa, rhinorrhea, hyposecretion of nasal mucosa, dryness of mucosa, hyperfluid secretion, hyperviscid secretion, hypermembranous secretion, vasomotor rhinitis, hay fever, rose cold, hypertrophy of mucosa, atrophy of mucosa.

### Acting in Ear.

*Circulatory:* Congestion, anemia.

*Sensory:* Earache, tinnitus (many kinds), tickling in ear, sensation of fullness and pressure in ear, sensation of weight in ear, vertigo.

*Motor:* Twitching sensations in ear, tonic and clonic contraction of internal muscles of ear.

*Trophic:* Hypertrophic changes of middle-ear tract, atrophic changes of middle-ear tract, otosclerosis, catarrhal condition of middle-ear tract, catarrh of Eustachian tube.

### Acting in Eye.

Lacrimation, eye-ache, eyestrain, photophobia, ambiopia or diplopia, asthenopia, amaurosis, contraction of visual field, scotoma scintillans.

*Lids:* Chalazion, edema of lids, hyperemia of lids, itching of lids.

*Conjunctiva:* Hyperemia of conjunctiva, edema of conjunctiva, chemosis, itching of inner canthus, catarrhal condition, altered secretion of conjunctiva.

*Cornea:* Erosion of superficial layer of cornea.

*Pupils, etc.:* Contraction of pupils, dilatation of pupils, asymmetry of pupils.

*Retina, etc.:* Distention of uvea leading to disturbances in pigment layer, dilatation of uvea and vascularity of ciliary body, glaucoma, choked disk.

*Muscles:* Blepharospasm, rhythmic blepharospasm, ptosis, external strabismus, internal strabismus, ophthalmoplegia, errors of accommodation, contraction of ciliary muscles, paresis of ciliary muscles.

### Acting in Brain.

*Circulatory:* Congestion, anemia.

*Sensory:* Feeling of seasickness, dazed feeling from nasal pressure, feeling of pressure in brain.

*Functional:* Insomnia, nightmare, uncontrollable somnolence, epilepsy, diminution of psychic energy, failure of memory, inability to concentrate, aprosexia, psychic depression, uncontrollable melancholy.

### Acting in Head.

*Circulatory:* Redness of cheeks, paleness of cheeks, erythema.

*Sensory:* Feeling of pressure in head from sinus or nasal pressure, pain and tenderness in nasolabial area, pain and superficial tenderness over frontonasal and midorbital region, symptoms resembling sinusitis from intranasal pressure, muscular pains, face-ache, toothache (upper), toothache (lower), forehead headache, temporal headache, occipital headache, vertex headache, chronic headache, trifacial neuralgia, tic douloureaux, headache up to hemicrania, hemicrania, migraine.

*Motor:* Spasmodic movement of facial muscles.

*Trophic:* Appetite and hunger, saliva running, nausea, stimulation of cerebral pituitary, inhibition of cerebral pituitary, hyperidrosis of face, trophic disturbances of scalp (alopecia).

### Acting in Throat and Neck.

*Pharynx:* Congestion of pharynx, anemia of pharynx, tickling of palate, tickling of pharynx, hypersecretion, hyperfluid secretion, hypofluid secretion, hyposecretion of mucous membrane, spasmodic movement of pharyngeal muscles, spasmodic movement of palate muscles, stimulation of pharyngeal pituitary, inhibition of pharyngeal pituitary.

*Larynx and trachea:* Weak voice, hoarseness, aphonia, partial paralysis of larynx, laryngeal spasm, catarrhal laryngitis.

*Neck:* Spasmodic movement of head and neck, rigidity of nape of neck, muscular pains, neuralgia, throatache.

*Thyroid:* Hyperthyroidism, exophthalmic goitre, hypothyroidism, myxedema, hypertrophy of thyroid, atrophy of thyroid.

*Thymus:* Stimulation of thymus, inhibition of thymus, hypertrophy of thymus, atrophy of thymus.

*Œsophagus:* Aerophagia.

### Acting in Thorax.

*Heart:* Rapid pulse, tachycardia, irregular heart action, intermittent pulse, cardialgia, hypertension of arteries, hypotension of arteries, angina pectoris, instantaneous arrest of heart action, arrest of heart action (death) from anesthesia of nose, especially in status lymphaticus.

*Lungs:* Catarrh of air passages, bronchitis, contraction of bronchial muscles, relaxation of bronchial muscles, asthma, spasmodic expiration, arrest of respiration, arrest of respiration in expiration.

*Parieties:* Muscular pains, pain along sternum, pain between scapulæ, neuralgias (intercostal and others).

### Acting in Abdomen and Pelvis.

*Gastric and epigastric:* Gallstone colic pain without passage of stones, gastric neuroses, gastro-intestinal neuroses, simulation of gastric ulcer, gastralgia, vomiting.

*Intestines:* Pain in cecal region, mucomembranous colitis.

*Sexual organs:* Sexual excitement, pain in genitals, painful menstruation, abdominal menstrual pains, sacral menstrual pains, neuralgic stomachache of menstruation, menstral pain between scapulæ, dysmenorrhea, menorrhagia, pregnancy following clearance of nose, severe vomiting of pregnancy (controlled by nasal manipulation), contraction of uterus, labor pains induced through nasal manipulation, control of true labor pains by means of nose, abortion produced through nasal manipulation.

*Genito-urinary organs:* The following symptoms are either produced or controlled by the nose — enuresis nocturna, pain in renal region.

*Parieties:* The following symptoms are either produced or controlled by the nose — pain in regions innervated by lower spinal nerves, muscular pains, lumbar pains, pain in sacrum, pain in lower abdomen.

### General Reflex Action.

*Co-ordinate:* Acceleration of respiration, retardation of respiration, cough, paroxysmal cough, sneeze, paroxysmal sneeze, hiccough.

### General.

*Integument:* Urticaria, erythema, edema.

*Circulation:* Chilly sensations, feverish sensations, contraction of peripheral blood vessels, dilatation of peripheral blood vessels.

*Muscles:* Chorea.

*Nerves:* Neuralgias and sciaticas, "rheumatic" pain and tenderness.

*Glands:* Excessive perspiration.

## IV. REFLEX DISTURBANCES REFERABLE TO THE EAR.

BY JOHN RANDOLPH PAGE, M.D.,

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This subject is too comprehensive and complicated for me to attempt to cover it in even a superficial way in the time allowed to-night. I will, therefore, consider only a few of the disturbances which are of more or less general interest and practical value.

The contraction of the muscles of the body which occurs when the acoustic nerve is irritated by a loud or unexpected sound is familiar to every one, but it is not generally known that these

reflex contractions can be produced in the newborn and that the extent of the contractions can be made to vary with the intensity of the sound employed. Dizziness, spasm of the respiratory muscles and changes in the heart action can be produced by musical tones, or by certain kinds of noises and sounds, and some neurasthenic people are peculiarly sensitive to irritation of this kind.

More interesting clinically are those disturbances caused by irritation of the nerves which supply the auricle and external auditory canal; namely, the neuralgias and coughs due to irritation of the trifacial, and Arnold's branch of the pneumogastric. A year ago a patient on whom I had performed a radical mastoid operation several years before became afflicted with a "goose cough" which persisted in spite of the treatment administered by her physician. The cough was due to irritation of Arnold's nerve, and it was promptly relieved by the removal of an epithelial crust from the cavity left after the radical operation. Another patient is thrown into an uncontrollable fit of coughing the moment a speculum is introduced into his ear. Such cases are too well known to be more than mentioned.

It is well, however, for the physician to bear them in mind, as a consideration of them may occasionally prove of practical value. Intractable coughs, particularly in children, and neuralgias which have resisted prolonged treatment, are sometimes relieved by the removal of a plug of inspissated wax from the canal.

The disturbances caused by affections of the middle ear are more involved. Reflex psychoses as well as reflex neuroses are met with, and we are startled by the reference of some authors to rather commonplace affections of the middle ear as causes of suicidal mania and profound melancholia. Fortunately such cases are rare. It is true, however, that headache and mental depression are often due to even slight catarrhal affections of the middle ear and Eustachian tube which interfere with the proper ventilation of the inside of the drum.

Pain in acute inflammations of the middle ear is frequently referred more to the temporal region and side of the head than to the ear itself, and it is not uncommon in ear clinics to find patients who have had sound teeth removed because of the pain referred to them from the ear. Even slight inflammations of the middle ear occasionally cause intense facial neuralgia which may be followed by temporary facial paralysis. I recently saw a case of marked edema and neuralgia of the right side of the face associated with slight tinnitus and stuffiness of the right ear. There were no visible signs of inflammation in the middle ear, but relief was afforded by inflation of it and the edema rapidly subsided.

With these neuralgias should be mentioned the cases of herpes oticus which are occasionally seen. Dr. J. Ramsay Hunt reported three cases last winter. He divides them into two groups, one referable to the geniculate ganglion of the seventh nerve and the other to the jugular ganglion of the tenth. They are usually accompanied by intense neuralgia, facial paralysis and auditory symptoms. While in a strict sense neuralgias and referred pains are not reflex, those referable to the ear are mentioned because of their clinical interest.

In passing to the purely reflex disturbances caused by irritation of the internal ear or labyrinth, I can best convey some idea of their number and complex character by saying that every symptom of seasickness in its most aggravated form can be produced by irritation of a normal labyrinth. To be more explicit, the irritation causes a movement of endolymph in the semicircular canals which causes a corresponding movement of the eyes; the surrounding objects seem to swim in the direction of the endolymph movement, and in an effort to overcome the vertigo produced the eyes fix on an object as it passes, and when their limit of movement is attained in that direction they snap back quickly and endeavor to fix themselves again. This peculiar movement of the eyes is known as vestibular nystagmus, and the study of it has proved useful in the diagnosis of labyrinthine disease.

Ewald found by experiment that a movement of endolymph in a semicircular canal is accompanied by a corresponding movement of the eyes in the same direction and in the same plane as that of the canal in which the endolymph moves, and that the snap back or nystagmus is in the opposite direction. The impulse passes from the disturbed endolymph through the vestibular nerve to Deiter's nucleus, thence to the nerves which govern the eye movements and also to the motor neurones of the cord, so not only is there movement of the eyes, but turning of the head and body as well, with staggering and loss of equilibrium. Knowledge of this relationship between the eyes and the endolymph has resulted in the development of the tests for labyrinthine disease now in general use. In cases of chronic suppurative otitis media a fistula in the horizontal semicircular canal can sometimes be diagnosed by compressing air in the middle ear, which causes through the fistula a movement of the endolymph, and a corresponding movement of the eyes. This is known as the fistula test. Bárány's observation of the disturbances produced by the use of heat or cold in the ear lead to his development of the caloric test, which consists in irrigating the ear with either hot or cold water.

When cold water is used in a normal ear a movement of endolymph is produced by convection in the anterior vertical canal downward and towards the ear irrigated, and there is a corresponding nystagmus or quick movement of the eyes to the opposite side; if the irrigation is prolonged, dizziness, nausea and vomiting with profound prostration develops. The same symptoms appear when hot water is used, except that the nystagmus is then towards the side irrigated. Where the water reaches the drum membrane for five minutes or more without the occurrence of any reaction, the labyrinth may be

considered functionless. The reaction occurs much quicker when the drum membrane is perforated or absent, and for this reason it is advisable for people with perforated ear drums to protect their ears before going in swimming. The effect of cold water on the labyrinth in these cases is sometimes very rapid, and the dizziness and loss of equilibrium produced might easily render one helpless in deep water. This is probably the reason why strong swimmers occasionally without warning suddenly utter a cry for help and go down before rescue is possible.

The disturbances caused by the destruction of one or both labyrinths, and the way in which the equilibrium which is at first lost is gradually regained through the sight and muscle senses, is very interesting, but the time is now too short to speak of them.

In conclusion, let me say, with slight exaggeration, that in different cases reported, a plug of impacted cerumen has been known to produce, through its irritation of the external auditory canal, its interference with the pressure equilibrium of the middle ear, and, consequently, that of the labyrinth, nearly every reflex disturbance mentioned to-night, even suicidal mania.

## V. WHAT IS THE MEANING OF REFLEX?

BY EDWARD D. FISHER, M.D., NEW YORK,
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All action is reflex, — breathing, swallowing, in fact, every act unless it has its initiation from the brain in some voluntary purpose. Even this, however, is undoubtedly reflex, as it depends on original primary reflex action. The child when born has had no previous cerebral impression, i. e., those which have entered into its conscious ego, because this has not as yet existed. The cerebral cortex is a blank sheet ready for and by heredity prepared to receive impressions. The child first acts simply reflexly; i. e., a sensory or afferent irritation or impulse is received by a cell group or center which responds through the motor or efferent nerves. The same reflex action can take place in the spinal cord without its recognition by the cerebral cortex or, in other words, by consciousness.

When we speak of reflex conditions we are dealing with an actual state. We must be careful, however, not to misinterpret this. A reflex action is fundamentally the same in all conditions. From the simplest form of protosoal life to the complex mammalia we are always dealing with the afferent or sensory nervous irritation, — the receptive center and its efferent or executive active fibers. In the mammalia repeated sensory impulses become permanently registered in the perceptive centers and become memories, so that many reflex acts are automatic, but they could not have become so unless they had passed through the primary simple process previously referred to. When we try to understand and explain all the conditions involved in reflex action, much must remain indefinite. The sympathetic system has its part to play and modifies the idea of a simple reflex act, as seen in the spinal cord or brain. We understand very little physiologically of the sympathetic system; it is practically *terra incognita*. This is the reason that the theories of Head with regard to our acceptance of them as of practical diagnostic value clinically fail of conviction.

To say that pain or sensory anesthesia in a certain area of the body absolutely indicates a disease of an underlying abdominal organ is difficult to positively acknowledge, if by it we are to definitely decide on an operation. Academically we can discuss the question, or take it up in the laboratory. The active practical worker, however, has to decide on the life and death issue.

Having given the ordinary understanding of the reflex, it would seem apparent that most of the so-called reflex conditions are only referred, that is, the natural conscious perception of a peripheral irritation, whether it be a perception of a color through the medium of the eye, or of hunger through the coating of the stomach. A sneeze can very properly be called reflex, and does not call the (cerebral) consciousness into action any more than the classical experiment on the decapitated frog when irritation of the abdominal wall causes the spinal reflex act of attempting to remove the irritation with the hind leg. That act is, in the true sense, purely reflex. The infinite number of disturbances in the body, whether of pain or other character, resulting from diseased organs, as the nose, eye or the abdominal organs, which specialists in their department of medicine find and call in a vague and indefinite way reflex cannot be called in the true sense of the term reflex, but simply referred. In many instances, in fact, probably most, even this is not the explanation, but rather the solution lies in the fact that we have separate diseased conditions, any of which are sufficient to cause a lowering of the general condition of health and thus permit a functional disturbance of another part of the body to become apparent. This is demonstrated every day when the nasal, ocular or aural specialist, after removing the actual local disease, has to resort to the treatment of the general physical condition, or direct the patient to some one who can, in order to secure the benefit which should result from his side of the case. Were this course more often followed than it is, there would be less complaint on the part of the patient that nothing after all has been accomplished by the generally absolutely necessary treatment of actual morbid conditions of the eye, nose, uterus or other organs.

The word "reflex" has taken such a hold on most specialists that without consideration of the general conditions of health, indeed, often without any study or investigation as to whether the patient has any other faulty condition of the system, they are apt to consider or think they have done all that can be done. The condition now, if not improved, is the patient's own fault. In other words, reflex is now translated, after they have removed all the offensive organs,

turbinated bones, uterus or ovaries, into hysteric or neurasthenic.

I must emphasize here that the neurologist must also be an internist, or as the term should be understood, a general practitioner, or he, in his own peculiar way, will also look on these cases in the same limited one-sided way. Much of this confusion in the practical honest treatment of patients is due to that word "reflex," which relieves everybody from any responsibility and covers errors by a mantle of ignorance.

Let us drop the word and say, when we don't know the cause of the condition, that we do not know, and not placidly sit down and call it "reflex," but in every way open to scientific research work out the cause of the disease. The term "referred" is often explanatory in many cases and then is preferable, but this is not to be accepted in all cases.

Head [1] has given us a theory in regard to reflex pains and anesthesia which he thinks should be held as positive in regard to diagnosis for localizing disease, especially in the abdominal organs. The physiological explanation is beautiful indeed, and from the standpoint of its study, i. e., the academic standpoint, is satisfactory, i. e., a locally diseased organ sends its irritation to the sympathetic system in the cord; the cerebrospinal system, on its part as represented in the spinal cord, sends its notification by expressing itself by anesthesia over the surface of the skin or the organ involved. Clinically it has been demonstrated that when we know by other positive evidence that disease of an organ is present, often no anesthetic or hyperesthetic area manifests itself, so the theory is not of positive diagnostic value. The end result is, therefore, careful examination of every case, looking for what are evident symptoms of varied types, not a single reflex condition.

## VI. REFLEX SYMPTOMS AND DISEASE OF THE NERVOUS SYSTEM.

BY WILLIAM M. LESTYNSKY, M.D.,
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THE reflex theory of nervous disease is of very ancient origin. It was based upon mistaken notions about reflex action and has often been confounded with associated disturbances of sensation. Its practical application often implies carelessness or inaccurate observation. We have all occasionally noted the subsidence of nervous symptoms following the removal of adenoids and enlarged tonsils, the correction of refractive and eye muscle defects, the removal of impacted cerumen, the relief of phimosis by circumcision, the cure of posterior urethritis, the repair of lacerated cervix and perineum, the relief of obstructive dysmenorrhea, or the ablation of diseased ovaries and adnexa, etc. But it should always be borne in mind that a co-existing neurotic state is usually intensified and not produced by any of the above-mentioned derangements. While these or similar conditions may cause pain, spasm, convulsion or other distressing nervous symptoms, they have never been known to develop a constitutional neurosis such as neurasthenia, hysteria, hypochondriasis, epilepsy or insanity. It is quite possible, as Dr. Morris has said, that the cause of reflex disturbances of the nervous system is overlooked regularly by diagnosticians. It is much more frequent, however, for organic nervous disease to pass unrecognized, particularly intracranial disease and atypical tabes. Hence, stretching or incision of the anal sphincter for the rectal crises of tabetics, exploratory laparotomy for vomiting associated with brain tumor, extraction of healthy teeth for the relief of tic douloureux, etc.

The term "reflex neurosis" came into existence about thirty years ago, when practical medicine was subdivided. into a number of specialties, different reflexes arising in each circumscribed specialty. It must be deplored that the same old unjustifiable expression is still heard from time to time, thus illustrating the difficulty of overcoming traditional custom.

To those who still adhere to the exploded doctrine of the ancient reflex theory, it may be said that the perpetuation of such a misconception has repeatedly been conclusively demonstrated to be unscientific and irrational. That it is our duty to make every reasonable effort to discover the cause of apparently inexplicable nervous phenomena is axiomatic. Biometric research supplies no practical guide to the individual, and his standardization is impracticable, nay, impossible. A slight physical defect may be significant in one and inconsequential in another, but to interpret (as some have done) such deviation from an arbitrary standard as the reflex cause of disease of the nervous system is a *reductio ad absurdum*.

Among the notable medical fallacies, none have been more prominent and persistent than that of attributing seemingly obscure nervous manifestations either to some reflex irritation originating in the female genitalia, or to so-called imbalance of the ocular muscles. In the majority of instances, the causal relationship cannot be satisfactorily established except in the fanciful minds of those with preconceived notions.

Absolutely authentic cases are extremely rare. In this connection it may be of historical interest to mention that soon after the advent of antiseptic and later aseptic surgical technic, the sacrifice of normal ovaries became extraordinarily and alarmingly frequent. Oöphorectomy was unsuccessfully practiced for the cure of neurasthenia, hysteria, hypochondriasis, epilepsy and insanity. Of course, in many cases such surgical interference was looked upon and condoned as a *dernier ressort*, but the conclusions as to etiology were based upon false premises. Although the pendulum is still swinging, such unwarrantable surgical mutilation is gradually but rapidly coming to a halt.

Some years ago, Dr. George T. Stevens of this city enthusiastically claimed that chorea and epilepsy were reflex conditions resulting from

[1] See Brain, 1906.

heterophoria or imbalance of the ocular muscles. At that time, I was associated with my friend, Dr. David Webster, and the late Drs. E. C. Seguin and Cornelius Agnew, at the Manhattan Eye and Ear Hospital, in studying the condition of the ocular muscles and refraction in patients with various functional nervous disorders. The muscle examinations were carefully made with the phorometer devised by Dr. Stevens and according to his methods, and continued over a period of two years. As the result of my observations at that time, and from subsequent investigation, I have reached the conclusion that muscular anomalies producing latent diplopia and unconscious efforts to maintain binocular single vision are undoubtedly a drain upon the nervous energy, often aggravating if not producing many neurasthenic and psychasthenic phenomena. But I am yet to be convinced that such is the cause of chorea, epilepsy or any other constitutional disease of the nervous system. As to published reports of cases of chorea, epilepsy, insanity, etc., having been cured by the surgical adjustment of ocular muscles, I have no desire to question the judgment or veracity of certain observers, but many of the cases thus reported will not successfully bear critical neurological analysis. To assert that patients have recovered from these neuroses after oöphorectomy, or after the correction of ocular defects, or cauterization of the nasal mucous membrane, urethra, etc., is begging the question, and does not necessarily imply that such affections were of reflex origin. In many cases the alleged rapid (but usually temporary) recovery has been due to suggestion, and the same result may often be accomplished by simpler and safer means. In psychasthenic and impressionable individuals, many so-called reflex symptoms may be initiated or fostered by suggestive physical examinations or injudicious remarks of the attending physician.

The disastrous effects of the reflex theory of nervous disease are quite familiar and require no further demonstration. Yet its misapplication is still more or less prevalent. The unfortunate tendency to ascribe many misunderstood nervous symptoms to so-called reflex causes is due, in a large measure, to the neglect of the majority of physicians to avail themselves of a working knowledge of the fundamental principles of neurology.

## THE INTRAVENOUS USE OF COCAINE. REPORT OF A CASE.

BY PAUL W. HARRISON, M.D., BOSTON.

In the *Berliner Klinischer Wochenschrift*, vol. xlvi, p. 1701, Ritter reports experiments on animals where cocaine in moderate doses (½ gr.) was administered intravenously. This was followed almost immediately by complete general analgesia. There was little or no interference with motor function. The results were so striking as to apparently demand investigation in human beings.

The subject of this experiment during the past three years three times had local anesthesia produced with cocaine, — once of a finger, once for work on teeth, once about a boil on the back of the neck. The analgesia produced at these times was not different in character or duration from that usually seen. There had been no other use of cocaine or allied drugs. This experiment was performed as follows:

Into one of the superficial veins of the back of the hand there was slowly introduced 5 gr. of cocaine in a 2% solution. The introduction of the solution was completed in about thirty minutes. Dizziness and palpitation made it seem wise to stop with this amount. Tests of the patient's condition were made at once and results found to correspond in an incomplete way with those reported for animals.

Cerebration was normal except for a restless inability to keep the mind long on one subject. Motor power was quite unimpaired.

There was marked analgesia everywhere. An incision ½ inch long through the skin, well down into the fat, was made on the anterior surface of the lower leg. This incision could be felt. It caused a mere trifle of pain. Two or three small nerves in the fat were cut. Each caused a slight twinge of pain. Apparently operative procedure might readily have been undertaken with only very moderate discomfort.

Two hours later a similar central incision was made on the opposite side. The sensation of pain had by this time recovered much but not all of its normal intensity.

It would seem evident, then, that, however suited to animals this method may be, the relatively enormous dose necessary for even an imperfect result makes it quite impossible for human surgery.

[This contribution is of peculiar value, since the experiment was performed by the writer on himself, a fact of which he modestly makes no mention in the text. It is evident that the information gained from this first-hand method of experimentation has a far greater validity than that through animal experimentation, although manifestly not widely applicable. — ED.]

## THE SURGICAL TREATMENT OF GONORRHEAL EPIDIDYMITIS.*

BY G. G. SMITH, M.D., BOSTON,
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EXTENDING vertically along the posterior and superior borders of the testicle lies the epididymis. This organ arises at the upper pole of the testis, where some fifteen or twenty minute tubules, the vasa efferentia, gather from the rete testis and convey to the epididymis the testicular secretion. In the epididymis, these vasa efferentia unite to form one slender duct, so fine that twenty feet of it are packed into an epididymis an inch and a half long. This duct, very greatly convoluted, with its loops held together by loose connective tissue and the whole surrounded by a tough fibrous jacket covered laterally with serous

* Read before the Surgical Fortnightly Club.

membrane, constitutes the epididymis. From the lower pole of the epididymis it emerges, much coarser and stronger, as the vas deferens.

When, during the course of a gonorrheal urethritis, the specific cocci invade this portion of the genital tract, they set up a more or less severe inflammation in the connective tissue between the convolutions of the spermatic duct. According to Hagner, an exudate forms in the interstitial spaces, causing a swelling which, confined by the tough fibrous investment of the epididymis, presses upon and occludes the lumen of the seminal canal. Pools of secretion, thick with leucocytes, spermatozoa and cellular débris, form behind the obstruction. In the devitalized tissue, with its circulation hampered by the pressure, the gonococci thrive. The dammed-up secretion becomes purulent; owing to its formation under tension, there is great pain and much absorption of toxins, evidenced by temperature occasionally as high as 104, and by leucocytosis, at times of more than 30,000.

Frequently, enough inflammation extends through the tissues to cause the formation of hydrocele. This usually persists as a clear yellow fluid, by its pressure a hindrance to the testicular circulation and a potent cause of pain. The fluid has occasionally been proved to contain gonococci, and not rarely has floating in it shreds of fibrin, or is tinged with blood. In very severe or persistent cases, in lieu of a hydrocele there has been found a thick friable blanket of exudate covering the epididymis and testicle.

In appearance, the epididymis is enlarged to several times its normal size, deep red or purplish in color, with at times blanched areas due to the extreme tension within the sac. Practically the same appearance has been produced experimentally by the injection of methylene blue through a pipette inserted just through the fibrous coat. Upon palpation, the epididymis feels of stony hardness, especially at the globus minor. The central portion is always least affected.

If the process is mild, it may not advance beyond the stage of primary inflammation; on the other hand, it may go on to the formation of tiny abscesses, and to the production of sterility upon the affected side from cicatricial stenosis of the seminal canal.

Not until recent years has this process been recognized as being peculiar to the epididymis. Formerly the testis was thought to be the main site of the disease. It was with that idea that Pirogoff, in 1852, punctured the testicle for relief of pain, and that Henry Smith, an English surgeon, published in the *Lancet* for 1864 a report of many cases of gonorrheal "orchitis," as he called it, treated by stabbing the testicle with a slender bistoury. This idea came to him as the result of a mistake in diagnosis. Thinking a patient had an abscess of his testis, Smith incised the tumor with a bistoury. Instead of pus, a knob of testicular tubules protruded. Smith reduced the hernia, strapped the wound together, and, much chagrined, sent the patient home. Two days later the man's condition had improved remarkably; Smith, upon considering the unexpected result, concluded that the relief of intratesticular tension was the keynote of successful treatment of the malady. Thereafter, all his cases of gonorrheal inflammation of the testicle were treated by puncture with a bistoury. At this same period, we are told, the same procedure was in vogue at the Hôpital de Midi in Paris.

Whether the treatment was too heroic, or whether, in those days of sepsis, some disaster following the introduction of a new infection made the remedy worse than the disease, is not recorded. The method fell into disuse and was practically forgotten by the great body of surgeons until, in 1903, Baerman, of Professor Neisser's clinic, investigated the subject. He described a series of twenty-eight cases treated by puncture of the epididymis, and advanced the first sound surgical principles in regard to the disease. These are so true to-day, and underlie so completely all operations for relief of epididymitis, that they will be given now.

They are:

1. In a considerable proportion of cases of epididymitis, abscesses develop.
2. Suppuration in the epididymis is regularly followed by hydrocele.
3. Gonococci are occasionally found in the epididymis years after the initial urethritis has ceased.
4. Early puncture is advised to save the canal from occlusion.
5. The accompanying hydrocele should be punctured to improve the circulation.
6. Incision and drainage should be practiced more frequently.

Notwithstanding the truth of these principles, they were not put into general application for several years.

Interest in the question in this country was first aroused by Belfield, of Chicago, who in 1905 wrote an article under the title of "Pus Tubes in the Male." He advised incising the epididymis in its long axis for about an inch and suturing the cut edges of the epididymis to the lips of the skin incision.

In May, 1906, Bazet, of San Francisco, published his operation, which he had been practicing for almost nine years, and claimed good results in some sixty-five cases. His custom was to cut down upon the epididymis along the ligamentum scrotale, thereby avoiding entering the tunica vaginalis, and after incising the epididymis, as Belfield advised, to pack the wound with ichthyol gauze. That this operation still has some adherents is shown by a report published in April, 1909, by Louis Gross, also of San Francisco, who had applied it to ten cases.

The man who really brought the operation into prominence in America, however, was Francis W. Hagner, of Washington, D. C. His first communication appeared in the *Medical Record* for Oct. 13, 1906, five months after Bazet's article had appeared, but quite independently. Hagner went much more thoroughly into the pathology of the disease, and reported his cases, six in

number, in a thorough, scientific manner. The operation which he developed, which is now used with modifications at the Massachusetts General Hospital, he performs as follows:

The patient is prepared and anesthetized, as local anesthesia does not suffice. An incision from 6 to 10 cm. in length is made vertically on the outer anterior aspect of the scrotum, over the junction of the epididymis with the testicle. The incision is carried through the tunica vaginalis. The hydrocele is evacuated, the testicle turned out and wrapped in warm moist towels. The epididymis is punctured with a tenotome through the fibrous covering, the greatest number of punctures being made where the induration is greatest. The point of the knife is carried through the fibrous coat into the connective tissue, where lessened resistance is felt. If pus is found, the cavity is evacuated, after a probe is inserted, by light massage, and the cavity syringed out with 1-1000 mercuric chloride, followed by salt solution. The tunica is closed with a running suture of catgut, a cigarette wick placed to the sutured tunica and the skin closed up to the wick.

With our ever-decreasing reliance upon antiseptics, the corrosive wash is now omitted. In the operation which I have seen, the wick was of rubber tissue simply, was led into the tunica, and the tunica was not sutured independently.

In his first paper, Hagner based his conclusions upon only 6 cases. Subsequent reports, published by him in 1909, give a total of 33 cases, — not an immense number, it is true, for he operates upon only 10% of all the cases of epididymitis which he sees. In these 33 operations, pus was discovered in 25, suppuration being about four times as frequent in the globus minor as in the globus major. In 5 of these cases gonococci were isolated from the pus. In one case where they could not be obtained from the pus, they were grown from the hydrocele fluid. No contaminating organism was ever found. In 2 cases there was no fluid in the tunica, but the opposed walls were adherent with plastic lymph.

The results which Hagner claims are absolute relief of pain, disappearance of general symptoms and permanency of cure. Only one of his 33 cases required morphia after operation. He had but one recurrence. The temperature and pulse always fell to normal within thirty-six hours, the greatest drop being from 104 to 98.6 within twenty-four hours. Leucocytosis was diminished, the maximum fall being from 33,000 to 8,400 within forty-eight hours. The average number of days during which patients were confined to bed was five, and only one case was confined to bed for more than seven days.

As for the final results as regards function of the testicle, there are no statistics. Hagner, massaging the affected side, obtained motile spermatozoa, but was not positive that they had not come from the unaffected vesical.

With a view to comparing results at the Massachusetts General Hospital with those of the above writers, and with those of unoperated cases of gonorrheal epididymitis, all cases recorded as such at the Massachusetts General Hospital were looked up. There were 2 not operated upon. One had at entrance a temperature of 104, which became normal in two days. In six days he was discharged, and in six weeks, according to the Out-Patient Department record, his epididymis felt normal. The other case ran an irregular temperature for five days after entrance, during which time he was "uncomfortable."

To contrast with these, there are records of 5 operated cases. One had a temperature of 101, the other of 102, both reduced to normal inside of forty-eight hours. No case had any pain after operation. They were discharged in respectively, eight, seven, five, five, three days. The seven-day case had a double epididymitis, from which all tenderness had disappeared within eleven days after operation. The Out-Patient Department record carries us no further. The end results of three are quite unknown, hence we may suppose there was no further trouble. The epididymis of the fifth man, six weeks after operation, showed very little induration.

It is an open question whether the ordinary case of gonorrheal epididymitis, if kept in bed with tight bandaging for three to five days, would not do quite as well as one which had been operated upon. The severer cases, with excruciating pain, marked toxemia and prospects of serious injury to the testicle, as well as the obstinate recurrent cases, seem to be fit candidates for epididymotomy. The conclusions given by Hagner and justified by the experience of eight or ten other operators sum up the situation thoroughly. They are as follows:

1. According to the known pathology, epididymotomy is a rational procedure.
2. If care be exercised, the danger is slight.
3. The infiltration disappears more quickly than with any other method.
4. The danger of permanent injury is lessened.
5. There is absolute relief of pain.
6. Systemic symptoms are promptly relieved.
7. Medical treatment offers relief but no permanent cure.

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## New Instrument.

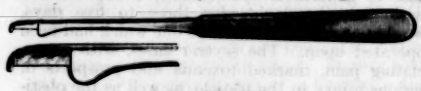
### A NEW TONSIL KNIFE.

BY OLIVER P. LOTHROP, M.D., BOSTON.

By the use of a new tonsil dissecting knife of the following design it is believed that great assistance will be afforded to those who do a capsule dissection of the tonsils. The initial incision of the mucous membrane around the tonsil near the inner edge of the pillars and the starting of the

plane of cleavage upon the capsule is the most important and difficult part of the operation of tonsillectomy. It is this part of the operation that the new knife carries out most perfectly with one sweep around the tonsil. With a straight, sharp-pointed scalpel it is often difficult to make an exactly continuous incision of the same depth around the circumference of the tonsil. Uncut fibers thus left prevent the pushing back of the pillars and the exposing of a clean capsule, and one is led to think that the tonsil is adherent. A too deep cut extending into the tonsillar tissue may cause annoying bleeding. A right-angled knife fails because the point may enter the tonsillar tissue or pillar instead of entering just over the capsule. Of such knives, two are required, one for each side. The model presented is equally efficacious for either side and for both pillars and supratonsillar fossa. When a dissector is used to push back the incompletely severed mucous membrane, considerable strain is put on the tonsil, frequently causing the tenaculum to slip off or tear through the tonsillar tissue. This annoyance is avoided with the new knife.

This knife is straight and measures 7½ inches. It resembles a bistoury. There is a single cutting



Codman & Shurtleff.

edge about ½ inch long. The point is blunt and the rounded tip extends at a right angle a trifle beyond the cutting edge of the blade. At the junction of the blade and shank there is a projection which prevents the cutting edge from coming in contact with a tongue depressor and protects the tongue when no tongue depressor is used. The shank is long and is flattened laterally. The hollow handle is likewise flattened. The knife should be kept very sharp. It can be sharpened easily on the cornered edge of a small whetstone.

The technic is as follows: First the tonsil is grasped with a curved tenaculum and drawn inward and a very short incision parallel and internal to the inner edge of the anterior pillar is made with a sharp, pointed scalpel, just through the mucous membrane of the plica down to the capsule. This exposes the outer surface of the capsule for instance about ½ inch. The knife is now passed under the tenaculum and the blunt point is inserted into the incision, between the mucous membrane and capsule. The blunt and rounded point will follow the curved plane of the capsule, and the cutting edge of the knife will incise the mucous membrane as it proceeds downward and under the tonsil. The projection of the rounded point at a right angle to the cutting edge prevents the knife from slipping out when once engaged. After cutting the mucous membrane anteriorly and inferiorly, the knife is reinserted over the tenaculum at the initial point, but turned with the cutting edge up. The blade is now carried up and over the tonsil, through the supratonsillar pillar and down between the tonsil and posterior pillar. As the knife passes over the upper pole of the tonsil, the tenaculum is carried to the corner of the mouth of the same side, thus turning the tonsil forward and outward. This allows a view and access to the posterior pillar. At all times the handle of the knife should be held near the corner of the mouth opposite the tonsil being operated. The left hand should be used in operating upon the left tonsil.

It has been found that the dissection of the capsule is started so perfectly by this continuous incision that the tonsil is partially enucleated and no dissector is required. The snare can be applied at once, this being the easiest and safest way to complete the shelling out of the tonsil with its capsule.

## Clinical Department.

### ANTIPERISTALSIS IN THE INTESTINE. A CLINICAL OBSERVATION.

BY FRED T. MURPHY, M.D., BOSTON.

ANTIPERISTALSIS in the large intestine has been observed experimentally by Cannon [1] and others. A case is reported by Mauclaire [2] in which, after implantation of the ileum into the lower descending colon, section of the colon above the anastomosis was necessary before the content of the gut would pass wholly downward. Stierlin [3] quotes a case of Wilms in which the same antiperistaltic action was observed. Other definite clinical observations supporting the experimental findings have not, so far as I know, been recorded. In order to add clinical evidence to the experimental on this question of antiperistalsis in the large intestine, the following case is reported.

CASE N. W., female, thirteen years of age, colored. Entered Massachusetts General Hospital accident room Sept. 14, 1908, service of Dr. Balch, to whom I am indebted for the privilege of operating. The history was that of appendix which had gone on to abscess formation. Temperature 101, pulse 120, white count of 10,000. Operation was advised and the patient immediately prepared. Three-inch right rectus incision separating the fibers of the muscle. Peritoneum was opened without incident. The exploring finger freed a little muco-purulent fluid and showed a matted, hard omentum packed about the ileocecal valve. The omentum completely walled off the general cavity from the ileocecal region, and in the manipulation the adhesions were not broken down. The cecum was with difficulty exposed and a retrocecal appendix removed.

In exposing the cecum the outer wall was torn. On account of the induration of the tissue it was impossible to close this rent, and a drainage tube was tied in. The extent and character of the adhesions suggested a general tuberculous process. The patient made an uneventful immediate recovery.

Feces were passed through the drainage tube. The acute symptoms subsided, but after a few days there began to be an evening temperature of 101–102. The general condition was not good. On Sept. 30 the drained

[1] Am. Jour. Physiol., 1902, vi, 265.
[2] Cong. de Chir., Paris, 1903, p. 86.
[3] Zeit. für Klin. Med., 1910, lxx, 376.

incision was packed and closed with running suture, then sealed over with collodion dressing. A second incision was made in the median line and parallel to the old. The peritoneal cavity was opened without incident. The lower ileum was exposed and freed from adhesions. The general abdominal cavity was found to be a mat of adhesions, the intestine being studded with small nodules. At the time of the operation the intestine was inspected by Dr. William F. Whitney, who gave a diagnosis of tuberculous peritonitis, but in some way the specimen taken for microscopical examination was misplaced. After freeing the lower ileum for about six inches it was cut across just above the ileocecal valve. The distal loop was turned into the large gut and closed with Lembert suture. The proximal end was implanted end-to-side into the large intestine, well beyond the median line of the transverse colon. Adhesions made orientation difficult, but the implantation was certainly to the left of the median line. This incision was closed tight.

During the first forty-eight hours following the operation the fecal fistula remained clean. During the next twenty-four hours the discharge was as profuse as ever. On Oct. 4 the patient had several normal movements and there was less discharge from the fecal fistula.

For the next month the condition remained practically the same. The lower bowel could be emptied by enemata of small fecal movements, but the fecal discharge from the colostomy wound remained as profuse as before the anastomosis between the ileum and the transverse colon.

On Nov. 9 the patient was removed from the hospital, against advice.

In this case there can be no question of the antiperistaltic action of the large bowel. The descending colon and rectum were patent, as was shown by the normal bowel movements on Oct. 4, but with this normally patent lower bowel the fecal stream entering the large intestine to the left of the middle of the transverse colon was continuously discharging through the cecal opening for a month at least.

## Medical Progress.

### REPORT ON OBSTETRICS.

BY ROBERT L. DE NORMANDIE, M.D., BOSTON.

#### OPHTHALMIA NEONATORUM.

In the past year great advance has been made in attacking ophthalmia neonatorum in Massachusetts. By the Acts of 1910, Chapter 458, the State Board of Health was empowered to distribute free to all registered physicians in the state the necessary preventive. That has been done and a 1% solution of silver nitrate in a dropper has been sent to every registered physician. With it was sent a most specific letter concerning the disease and the necessary steps that should be taken to prevent destruction of the eye should ophthalmia develop. All physicians in the state have now been notified that the disease must be reported at once. All physicians in Boston have further been notified by the Boston Board of Health twice that this disease must be reported. No physician can now with any degree of honesty deny that he has been notified of the law. It plainly showed that the boards of health had every intention of treating the physicians fairly and the physicians can now plead no lack of knowledge or any extenuating circumstances. There is a widespread feeling to-day among physicians that this law refers to gonorrheal ophthalmia only. By a wise proviso, there is no reference to that disease. By reporting it, there is no shame brought to the child's family. A conviction has been obtained in the Suffolk Superior Court for failure to report a non-gonorrheal case even when the eyesight was saved. The law only says if the eyes "become inflamed, swollen or red, and show an unnatural discharge within two weeks after birth." Since the various warnings have been sent out, the number of cases reported has much increased, but even with this improvement seven infants were brought to the Massachusetts Eye and Ear Infirmary during 1910 totally blind from ophthalmia neonatorum. It is estimated that rearing each infant to the age where the Massachusetts Commission for the Blind can help it to useful work means an outlay of about three thousand dollars. In other words, these seven infants are going to cost the state roughly twenty thousand dollars, provided they live, before they become of any value whatsoever to the state. Throughout the state there must necessarily be, because of all the literature that has been freely sent about it, a change in the attitude the laity will take about ophthalmia neonatorum. It has been well shown that practically every case of ophthalmia neonatorum may be cured if taken in time and adequate treatment be given. The laity will soon realize that in any case of blindness the physician in charge in a very great majority of cases is to blame because adequate means were not taken early enough. The State Board of Health through its district inspectors are following up all cases of ophthalmia to see that sufficient treatment is carried out, and further than that, the State Board writes a strong letter to all physicians who may neglect to report the cases of ophthalmia at once.

The Massachusetts Medical Society recognized two years ago the seriousness of this destructive disease and appointed a committee to give advice about it. This committee sent to each member of the society a statement concerning the treatment which has given the best results.

The Boston Board of Health has charged four physicians with neglecting to report their cases. One physician in East Boston was fined, but the judge, the next morning, revoked the fine. Two other cases were tried and found guilty. The fourth case, a Roxbury physician, was tried January, 1911, but was not convicted. Trials, convictions or non-convictions will go far to prevent greatly the number of blind children in this Commonwealth. The law in regard to this disease is clear and has been tested in court and found sufficient. With the notices that the State Board of Health has sent out, and the advice that The Massachusetts Medical Society has given, and in Boston that which the local Board of

Health has given, a splendid impetus has been given to prevent entirely this wanton destruction of eyesight. As a result of the various local investigating committees on the prevention of blindness, last December, there was formed in New York a national Association for the Prevention of Blindness and the Conservation of Vision. Much educational work has been accomplished, and still more is to be done. The necessary laws and warnings have been given. It remains now for each city and town board of health to take the necessary action to wipe away this unnecessary blindness. The conscientious physician is not the offender. From various investigations it apparently is not the illegal midwife, but is the poorly trained unscrupulous physician who is practicing medicine as a business and not as a profession.

### PHARMACOLOGY OF ERGOT.

Wood and Hoffer[1] have carried out a series of experiments in order that the preparations of ergot on the market may have the same strength and the same pharmacological action. Their conclusions as regards the quality of ergot that is at the disposal at the present time of physicians are as follows:

(1) Preparations of ergot obtained from retail pharmacists are almost universally below the standard.

(2) No preparation of ergot which does not contain considerable amounts of alcohol or some similar inorganic solvent can thoroughly represent the drug.

(3) Starting with an active specimen of the crude drug, the fluid extract, freshly made according to the process of the eighth revision of the United States Pharmacopeia, will furnish a potent preparation.

(4) Both the crude drug and the fluid extract deteriorate comparatively rapidly.

(5) They recommend that all preparations of ergot should bear on the label the date of their manufacture, or at least the date beyond which the strength of the specimen cannot be trusted, as do the antitoxic serums, and should be preserved in small bottles hermetically closed.

### THE SURGICAL TREATMENT OF PUERPERAL SEPTIC INFECTION.

Vineberg[2] regards the indications for surgical interference difficult to formulate for the reasons that there are no reliable guides either clinically or pathologically as to the course and prognosis of a given case. Puerperal septic infections show a marked variety of lesions with varying degrees of intensity. There is only a very small percentage of cases where major surgical operations come into the question at all. He follows Bumm's classification of a general streptomycosis (pure septicemia); second, the localised streptomycosis. In the first class the patient generally dies within a few days of continued high fever with rapid destruction of the red blood cells. Any surgical procedure in this class is probably useless with our present means of diagnosis. In the second class, there is a marked tendency to localize the infection in an affection of the lymph channels of the uterus or of an endophlebitis rapidly extending over the uterine sinuses and the vena cava. With a septic lymphangitis or septic thrombophlebitis the bacteria may or may not be in the blood. Presence or absence of streptococci in the blood Vineberg regards as no reliable criterion as to the malignancy or non-malignancy of the infection. He refers to sixty fatal cases of puerperal sepsis where a negative blood culture was found thirty-eight times, while a positive was only found in twenty-two. Freund and Bumm first ligated only the spermatic veins, and it was Trendelenburg who showed that the hypogastric or internal iliac veins were also oftentimes involved. In the diagnosis of a septic thrombophlebitis Trendelenburg lays stress upon repeated chills, and he advises operating on the occurrence of a second chill. This Vineberg disagrees with. Vineberg feels that the great elevation and depression of the temperature curve within the twenty-four hours, usually associated with the marked rise and fall of the pulse, is especially suggestive. The pulse and quality is good, subjective symptoms are few. The patient's appearance is usually good; the pelvic and abdominal examination often negative. Some observers say that they can palpate the thickened and thrombosed veins. The diagnosis is made by the negative results of our local examination and by the process of exclusion rather than by any positive finding.

Vineberg describes his technic with two illustrations. Other forms of puerperal sepsis, — putrid endometritis, severe traumatism of the uterus with probable infection, septic salpingo-oöphoritis and pelvic exudates, he briefly reviews.

### CÆSAREAN SECTION IN THE PRESENCE OF SEPSIS.

Maxwell[3] reports a case of a patient upon whom he did a Cæsarean section after labor had progressed forty hours and the membranes ruptured. Forceps delivery had been attempted and failed. Patient's pulse was 110, normal temperature. Fetal heart 120–130, normal and regular. The only difference in technic that Maxwell carried out was that before doing the section the uterine cavity was washed out with sterile salt solution, the temperature of which was 105° F. Maxwell felt that this temperature would be reduced to 100 by the time it got into the uterus, and probably would not induce premature fetal respiration. He used several quarts of the saline solution and the fluid escaped freely. Recovery of the patient was uncomplicated and the baby lived.

The mere washing out of the uterine cavity with salt solution probably did not prevent this patient developing sepsis. Good fortune rather than good obstetrics is here evidenced.

### THE INFLUENCE OF PREGNANCY AND LABOR UPON DISEASES OF THE EYE.

Germann has raised the question whether the induction of abortion and premature labor is justified when the vision is endangered by the pregnancy. He wrote especially of albuminuric retinitis, detachment of the retina, choked disk and the various forms of inflammation of the optic nerve. He also reported four cases of serious purulent keratitis which began during pregnancy or lactation. His conclusions are that the preservation of the mother's sight is of much more importance than the life of the child and that physicians should lay more weight upon the health of the eyes of the mother and that they should not delay in inducing abortions when the vision of the mother is endangered.

Fejer[4] in his book writes that obstetricians have paid but little attention to the connection between pregnancy and the diseases of the eye. Chronic nephritis and the retinitis caused by it form unqualified indications for the termination of pregnancy. In choked disk likewise the termination of pregnancy is useful as well as in purulent keratitis. Kneis, Schmidt, Rimpler, Groebouw, Axenfeld, Silex, Cohn, Berger and Runge, Fejer says, have all studied the connection of eye diseases with general and uterine diseases and have without exception declared that in all cases in which pregnancy is complicated by eye diseases, particularly of the retina or optic nerve, the nutritive condition of the mother, the condition of vision, the objective changes in fundus, the social conditions of the parents and the desires of the mother must all be taken into account in the question of inducing abortion. Fejer reports a case of a woman thirty-five years old who had myopia and was two months' pregnant and the mother of three children, who came to him with her husband to ask what probable influence pregnancy would exert upon her eyesight, for she had noticed that after all of her three previous confinements her myopia had increased very markedly. Her eyes showed a marked myopia. In the fundus there was a circular conus half the size of the papilla and there were chorio-retinal changes in both eyes. Fejer, on careful consideration of the facts, advised abortion and this was done, with the result that the myopia did not progress up to the present time, which has been three years. Fejer concludes that the declaration of the patient that the myopia advances greatly after confinement should not be passed over lightly and that all the points above enumerated should be taken into consideration, consultations called and abortion induced oftener than is the present case.

### CÆSAREAN SECTION BY THE SMALL MEDIAN INCISION ABOVE THE UMBILICUS.

Davis[5] reports the points of interest in 256 cases of Cæsarean section at the New York Lying-In Hospital. The maternal mortality was 14% and the child mortality was 12.74%, with stillborn cases of 7.34%. In ten of the cases Davis operated upon himself, the operation was done twice, in one case three times and in one case five times. Rupture of the uterus was found twice in patients upon whom Cæsarean section had previously been done, and both of these cases had gone on in labor forty-eight hours without reporting to the hospital. Davis says that the still relatively high maternal mortality is largely chargeable to the broadened field where the operation is now used and not to the operation itself. Davis feels that in eclampsia Cæsarean section is the safest and quickest way to deliver the patient. In the past nine months he has done eighteen Cæsarean sections on eclamptic cases with the result that fifteen mothers and thirteen children were discharged from the hospital well. Davis favors the enlarged broadened indication for this operation and chooses, when possible, the very beginning of labor, thereby making no mistake in the development of the child. The only real difference in technic that he recommends is the opening of the abdomen by the high median incision 8–10 cm. from above down to the umbilicus. A small gauze dressing is held in place by tight adhesive straps across the wound only and supported by a binder which is tight only across the wound. By this means the uterus is allowed free play in the lower abdomen. The head of the bed is raised to favor drainage. The patient sits up in a chair the eighth day and is discharged on the twelfth day. Davis does not render the patient sterile because of the many successful repeated sections that have been performed there. There is no need for haste in doing the operation and he says it should be done with deliberation, and when done otherwise, great danger arises. The objects gained by the high incision are that it does not allow easy exposure or escape of the abdominal contents. The wound is away from the site of greatest strain. It is small and the liability to adhesions between the abdominal wound and the uterine wound is greatly diminished. Davis says he has never seen a hernia following it.

### ORIGIN AND PREVENTION OF PUERPERAL FEVER.

Doederlein[6] says of the many factors in puerperal infection, two stand out with clearness, (1) infection from within the female generative organs themselves and (2) inoculation by pathologic organisms from without during labor or the puerperium. The flora of the vagina, he says, gives extensive protection against virulent infection at least during pregnancy and during normal labor. Only one definite micro-organism, bacillus vaginæ, has its natural habitat there. The bacillus plays an important rôle in preventing the growth of other micro-organisms by the production of lactic acid. Doederlein carried out a series of experiments to determine whether disinfection of the vagina gave better or worse results than non-disinfection, the rest of the technic in the delivery being the same. The only difference was, in the first series, the vagina was scrubbed out as gently as possible with a 1-1000 sublimate solution, while in the second

series the vagina was left absolutely alone. He found that the patients where so-called disinfection was practiced were twice as badly off as regards fever as those who had been disinfected. Doederlein says that when the vaginal flora are disturbed by disinfective measures the chances of parturition remaining entirely physiological are decreased. To prevent disinfection by the second cause he demands that examination be made only by gloved hands. In order to reduce the cost of gloves, he has had made a two finger glove so that now they can come within everybody's means.

### B. COLI INFECTION OF THE URINARY TRACT COMPLICATING PREGNANCY.

Burnett,[7] in a most thorough and interesting article, writes on the infection of the urinary tract by micro-organisms during pregnancy. He finds that in French and German literature there has been more written on this subject than in Great Britain. He does not speak of any work on pyelitis that has been done in this country. He reports four characteristic cases of pyelitis with the chemical findings of the urine, also the bacteriological findings. He finds no system of classification entirely satisfactory, but divides them into acute cases; second, chronic cases, and third, slight or evanescent cases. The disease may show itself as early as the fourth month and probably appears the most frequently at the fifth or six month. Burnett thinks it is more frequent in primigravidæ, though it may complicate any subsequent pregnancy. The acute cases divide themselves into those with bladder symptoms and those showing a renal disturbance with few if any bladder symptoms. This second group constitutes the great majority of cases. In this type the patient is seized with sudden rigor and temperature accompanied by diffuse abdominal pain. Nausea and vomiting are not infrequent. The urine is scanty and high colored. In some cases there is frequency of micturition. Physical examination shows rigidity of the abdominal muscles, especially on the right side. The patient complains frequently of pain about the appendix area as the site of the greatest suffering. Palpation shows tenderness most frequently over McBurney's point. Burnett feels that the most characteristic feature of the physical examination of this condition is the extreme hyperesthesia over a wide area in the right kidney region. Burnett feels so strongly that this is invariably present that he has come to feel that when a patient has a pain over McBurney's point accompanied by right-sided hyperesthesia in the costo-vertebral angle that the case is more likely to be an infection of the urinary system than of the appendix. Examination by vagina may show tenderness over the whole of the posterior bladder wall. In a large percentage of cases there is a tender spot where the right ureter enters the bladder, and the ureter here may be thickened and dilated so as to be readily palpable. Temperature may be up to 104° with a marked remission in the morning. Fever is usually preceded by a chill. After the first few days of onset, the intermittent aspect of the temperature chart disappears. The temperature may be persistently high, indicating either involvement of the renal tissue or that the bacillus has attacked some other organ. The pulse-rate remains comparatively low, from 100–110, until some complication arises. Pain is invariably present, the location of which is doubtful, referred either to the upper or lower part of the urinary system. The wide area of hyperesthesia is most important. In the majority of cases the urine has no characteristic smell, when the infecting organism is purely B. coli. There is no ammoniacal odor for this organism has no power to split urea. The urine may be passed in moderate amount with or without frequency or pain. It is turbid, which is due partly to the presence of mucus, also to the presence of flakes of lymph and shreds of epithelium and pus cells. The reaction is invariably acid when the B. coli is present in pure culture. If the infection is mixed, the urinary reaction may be neutral or even alkaline. The specific gravity shows no marked abnormality. Sugar is rarely present. Albumen is usually present in small quantities and there may be a small amount of blood. By the microscope, pus cells are present in more or less abundance. B. coli are recognised usually in pure culture. Burnett feels that the only way of definitely distinguishing the source of the pus is a careful study of the clinical symptoms plus a cystoscopic examination with ureteral catheterization. The acute cases untreated run a course of several weeks with deepening toxemia and repeated rigors. In the chronic type the onset is more insidious and shows malaise, muscular pains and irregular temperature. Bladder symptoms may be slight or absent entirely. Pain and tenderness in the kidney region is always present, though not nearly so marked as in the acute cases. The slight cases are naturally overlooked, Burnett feels, but given a pregnant woman complaining of intermittent attacks of "lumbago" with griping pains especially over the right side, the urine should be carefully examined for evidence of B. coli infection.

In the bacteriology of these cases the colon bacillus is the most frequent, but is not the most serious, as both the streptococcal and staphylococcal infections are much more dangerous. The question of the severity of mixed infections is still an open one. The following points in the clinical picture Burnett regards as important: (1) Rigor with sudden elevation of temperature occurring in a pregnant woman in good health. (2) Sudden onset of acute abdominal pain, especially on the right side. (3) Attacks of "lumbago" during pregnancy. (4) Well-defined tenderness in the appendix area and associated with a wide area of hyperesthesia over the right renal region. (5) Acute abdominal distention, sometimes so marked as to cause respiratory embarrassment. (6) A pregnancy cystitis that persists in spite of customary treatment. (7) Pyuria in pregnancy.

In the differential diagnosis, appendicitis, acute intestinal obstruction, renal or ureter stone, malaria and pneumonia with pleurisy, all must be carefully considered and ruled out by a careful examination of the urine in all cases. Burnett feels that the etiology of the disease is very complex and obscure. There are two ideas as to how the bacillus gains access to the urine — either an ascending infection or a descending, hematogenous infection. There is much to be said in support of both views. The marked unilateral frequency of the disease especially affecting the right side is very prominent. Several explanations are given, though none can be proved. In the treatment, rest in bed, attention to the bowels, bland diet and forcing fluids will readily procure relief in the mildest cases. For medicinal treatment, Burnett gives large doses of citrate of potassium or sodium, 30–40 gr., every three hours. Burnett says he is unable to explain the rationale of their action, for theoretically one would expect that making the urine alkaline the bacteria would thrive better in an alkaline media than in an acid one. Urotropin he has been disappointed in its action when an infection is due to a pure culture of the B. coli. With a mixed infection it is a distinct advantage to use it. Serum treatment has not as yet proved satisfactory. In the operative treatment, nephrotomy or interruption of pregnancy by emptying the uterus may occasionally, he says, be necessary.

He recommends interruption of gestation in very severe cases where the ordinary palliative treatment has been unavailing rather than submit the patient to a nephrotomy.

### CÆSAREAN SECTION FOR IMPASSABLE CONTRACTION RING.

Dickinson[8] says that Cæsarean section is warranted in the presence of an impassable contraction ring when the following conditions are present:

(1) Child living and not definitely enfeebled or endangered by length of labor, long drainage of waters or unskilled attempts at extraction.

(2) Ring refuses to relax under morphia or to yield to complete etherization, coupled with patient manually dilated by a skilled obstetrician.

(3) Mother in fair condition for a laparotomy and not infected.

(4) Request by patient and husband that a somewhat increased risk to the mother be assumed for the sake of obtaining a living baby in lieu of embryotomy.

And that these conditions are perfected if

(5) At a previous labor in expert hands this same condition of the contraction ring has caused loss of a child not unduly large.

He then reports a case of his own where he did a Cæsarean section with the above conditions fulfilled. The patient had been in poor labor for at least forty-eight hours when the section was decided upon. Both patients made a good convalescence. He gives details also of three other cases which were treated the same way. In two of these cases the mother died, but all the babies were saved. He reviews the study of contraction rings, going over the etiology, the diagnosis, the mortality to the mother and to the children and the treatment which may be instituted. The treatment of a contraction ring he divides as follows:

Relaxation by rest induced by morphia, by anesthesia to a surgical degree, dilatation by hand, by bags and by traction, embryotomy, Cæsarean section with the removal and without the removal of the uterus. He says Cæsarean section has a narrow but well-defined place, as is shown by his first remarks. Dickinson ends his paper by saying that Cæsarean section is safer than embryotomy in the worst degrees of ring contracture and tetany.

There is no question but that occasionally, or, better, very rarely, we are driven to do a Cæsarean in spite of our realising that the operation is contra-indicated. One of Dickinson's main points in the indications for doing a Cæsarean for an impassable contraction ring is the fact that the patient is not infected. One cannot always definitely state, but there is no question but we can take it as a law in obstetrics that the chances are very much in favor of infection when a woman has been in labor forty-eight hours or longer and has had any operative interference no matter under how good technic. There is a certain percentage of cases no doubt where the classical Cæsarean section will be done and both mother and child saved. Such a case is the first one reported by Dickinson. In Dickinson's summary he says that a third of the mothers and half the children died in the reported cases of impassable contraction ring. He has reported four cases where a Cæsarean was done. In these cases 50% of the mothers died, while all the children were saved. From an obstetrical point of view the four cases which he reports were badly managed. It surely cannot be regarded as the best obstetrical teaching to allow a woman to be in labor twenty hours with membranes ruptured and complete dilatation for six hours with good labor pains going on all of this time, or is it good obstetrics to allow a case to go on in labor fifty-two hours in the first stage and then after hard operative attempts at delivery to do a Cæsarean. Or in the fourth case, is it good obstetrics to allow a patient to continue four hours in the second stage without progress and then to have forceps applied and traction made for one-half hour with negative results and then to do a Cæsarean section. In his article he says it is unfortunate that the diagnosis of contraction ring cannot be made until the labor is well established for the reason that the contraction ring has no existence save during the act of labor. Therefore, as an indication for Cæsarean section, it cannot be classed with the indications for primary sections. In Dickinson's summary we find him recommending Cæsarean section on a dead fetus with an undilatable contraction ring, provided, of course, that the case is not infected. The criticism of this article is that it is the case, apparently, nowa-

days that one turns to Cæsarean section as a justifiable operation for any obstetrical complication. In the matter of diagnosis these four cases that Dickinson reports all should have been suspected. The long slow labor of poor character, without force and without advance, should lead one to suspect a contraction ring, and if one is suspected, the time to operate is at the beginning of that contraction ring and not after it has gone on and become an impassable ring. Dickinson is favoring a major operation where it has been conclusively shown that the mortality rate is very high. By his own article he has shown that he has increased the mortality rate from 33% to 50% in the mothers, though to be sure he has reduced the mortality rate in children to nil.

### DURATION OF PREGNANCY WITH A NEW RULE FOR ITS ESTIMATION.

McDonald [9] reviews the much-debated question of duration of pregnancy and shows that there seems to be conclusive proof that pregnancy may persist for longer than two hundred and eighty days and that when it is prolonged the resulting chill is commonly of large size. In order to determine the date of labor, McDonald has evolved a rule which is dependent upon the height of the fundus above the symphysis. The rule is as follows:

The duration of pregnancy in lunar months is equal to the height of the uterus in centimeters divided by 3.5. In order to take this measurement, the patient is lying flat upon the bed, one end of the tape is placed at the upper border of the symphysis, while the other is held by the palm of the hand. The fingers of the upper hand are held at right angles to the fundus and the tape follows the contour of the uterus except at the last dip. Multiparæ with lax abdominal walls should be supported at the sides when the measurement is taken. McDonald says that this method is very exact after the sixth month, but depends upon the estimation of the size of the fetus. He says that when the uterus arrives at the height of 35 cm. or full term, the fetus is of a weight of 3,300 gm., the average size. He further argues that an average size baby usually comes at the average period of pregnancy, therefore the rule. He further states that for every centimeter of height above 35 cm., approximately 200 gm. should be added to the weight of the fetus. Sinking of the fetus in the last two weeks of pregnancy causes but little error, as the head, he says, when the patient is recumbent, rides upward.

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## Reports of Societies.

## MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

THIRTY-SIXTH ANNUAL MEETING, HELD AT DETROIT, MICH., SEPT. 13, 14 AND 15, 1910.

(Concluded from No. 4, p. 135.)

### PULMONARY TUBERCULOSIS AND SYPHILIS, WITH BRIEF REPORTS OF THREE CASES.

DR. ROBERT H. BABCOCK, of Chicago, cited the views of different writers as to the mutual influence on each other of the association of these two infections and showed that the effect of the second infection depended largely on the stage of the primary disease. He then narrated the salient points in three instances coming under his observation in the past year, in all of which pulmonary tuberculosis was developed in the late stage of syphilis with apparently a retarding effect on the tuberculosis.

His conclusions were as follows: (1) The effect of the association of pulmonary tuberculosis and syphilis seemed to depend largely upon the stage of the primary disease during which the second infection was acquired. (2) The acquisition of syphilis during the incipient or early period of tuberculosis appeared to be of a negative influence or even in some instances to exert a retarding or curative effect on the tuberculosis. (3) Syphilis acquired by a consumptive in an advanced stage was likely to aid the downward progress of the tuberculosis. (4) Tuberculosis when developed during the primary or secondary stage of syphilis offered a bad prognosis and was apt to run a rapid course. (5) When pulmonary tuberculosis developed during the third or late stage of syphilis, it was apt to pursue a slow course, probably because of the tendency of the lues to sclerosis during this stage. (6) The association of these two diseases did not preclude the mercurial treatment of the syphilis by intramuscular injections and inunctions, but iodine if administered at all must be used cautiously because of its tendency to hasten softening of the tuberculous foci. (7) During the antisyphilitic medication there should be no relaxation in the hygienic measures recognised as necessary in the management of the tuberculosis.

### PRELIMINARY REPORT OF CASES TREATED BY DR. CARL SPENGLER'S TUBERCULOSIS IMMUNE BLOOD.

DR. W. F. WOOLSTON, of Chicago, stated in his paper Dr. Spengler points out that in previously immunized patients, after an injection of an antigen, the following relative change in position of the stored-up immune substances took place. In about half an hour the quantity of serum immune substances increased, with a decrease in the immune substances of the red blood cells; and in a few days the deficiency in red blood cells had again been balanced or overbalanced and the serum left deficient of these bodies. Dr. Spengler was of the opinion that the leucocytes played a part in the absorption of these bodies. It would be seen that he regarded the erythrocytes as the main source of the production of immune bodies. In healthy animals, after tuberculous poison had been injected, the immune bodies were demonstrable in the red blood cells. They appeared to be adherent to the hemoglobin and could be separated chemically or mechanically.

He had not as yet, in a preliminary paper, with the limited time and number of patients, been able to always say beforehand just which cases would improve. However, the acute miliary had shown the

most striking results, as health had been regained in a comparatively short time. Some of the chronic cases had shown no improvement and two of them seemed to have old lesions stimulated to activity. Some of the untoward effects had been a diarrhea, which had been easily controlled by some mild intestinal antiseptic. In a case of one nine-year-old patient a rash occurred after the first injection which disappeared in twenty-four to thirty-six hours. Among the earliest signs of improvement was the disappearance of lassitude, an improvement in the appetite, a decrease in the amount of sputum and number of bacilli, a gain in weight, an improvement in sleep, and a lowering of temperature and pulse. The toxic pulse, however, took more time to reduce, and sometimes heart stimulants were indicated to aid in the myocardial power. The conclusions of writers who had used this tuberculosis immune blood serum were favorable as to its efficiency

### PROSTATIC HYPERTROPHY.

Dr. John E. Cannady, of Charleston, W. Va., in his paper stated prostatic hypertrophy was the greatest curse of age in man. The chief indications for operative relief of obstruction were difficulty in urination and residual urine. He spoke of the value of bladder irrigation and the administration of urotropin and sodium benzoate. This combination was well borne by the stomach. Matters of diet and water drinking were of paramount importance. The choice of operation, whether suprapubic or perineal, depended largely on the individuality of the operator. The value of suprapubic cystotomy was pointed out. He spoke of Hunter McQuire's method and emphasized the necessity for rapid work. The popularity of the different methods was largely a matter of geography, like chloroform and ether. He spoke of the results of Freyer and Young, and pointed out the advantages of a non-toxic local anesthetic, such as novocain, in doing a cystotomy. Only a brief general anesthesia was necessary for the completion of the two-stage operation. He spoke of the management of the patient before, between and after the various steps of the operation. They should always bear in mind the conservation of the patient's strength. The two-stage operation cut the danger in half. Normal saline irrigation was of great value. The end results were almost ideal in the average case, there being both anatomical and physiological restoration of urethra and bladder. He reported illustrative cases showing the management of the normal case.

### THE INTERPRETATION OF JAUNDICE.

Dr. Charles N. Smith, of Toledo, Ohio, gave an interpretation of jaundice as observed in gallstone disease and its associated conditions — the interpretation of a symptom which was both infrequent and inconstant, and, at best, indicative only of complications, or terminal events.

### DISCUSSION.

Dr. J. H. Carstens, of Detroit, Mich., stated the common everyday catarrhal jaundice was of great importance. It was caused by gastro-duodenal catarrh, so-called. A patient would have jaundice and in the course of five or six weeks it would disappear, and whether treatment had any effect or not he had grave doubts. He had had this form of jaundice himself. He took everything his physicians told him to take,— sweet oil, calomel and many other things,— but the jaundice continued. He then restricted his diet to nitrogenous food, and did not take any kind of carbohydrates, oils, fats, etc., but some good lean beef, some eggs and water, and in a short time the jaundice disappeared.

Dr. R. N. Murray, of Flint, Mich., stated after suffering from jaundice for a considerable period of time and having tried various remedies, at the request of some Flint physician he took hydrochloric ammonia in ten to fifteen grains every two hours, and in four days the jaundice cleared up.

### A NEW PRINCIPLE IN THE TREATMENT OF GRAVES' DISEASE.

Dr. George W. Crile, of Cleveland, Ohio, stated the benefits which followed the ligation of the superior thyroid artery were due for the most part to the break of the nerve supply which was inevitable in the course of the ligation. In Graves' disease the thyroid showed a work hyperplasia, and the brain cells showed a work exhaustion. In Graves' disease the brain sent a more or less constant flow of stimuli into the thyroid gland. The thyroid responded by an increase of its secretion. This increased secretion of the thyroid caused an increased activity of the brain cells. In this manner the brain and the thyroid reciprocally goaded each other, and this deadlock, if not broken, continued until one or the other was worn out. This he believed was the explanation of the curious ending one occasionally observed, namely, the sequence of myxedema and Graves'. Breaking of the nerve connection between the brain and the thyroid gland rendered Graves' disease curable. No case of Graves' disease was cured by operation alone, and no case was cured until the thyroid gland and the brain were both restored to the normal. This was best secured by operating in such a manner that there was no excitation of the nervous system, nor of the thyroid glands; hence no volatile outbursts during or after the operation, and no operative danger; then placing the patient in a rest cure for a month or more, depending upon the severity of the disease. If, on the other hand, the patient after the operation was at once immersed in the environment in which the disease originated, there would be many disappointments. The plan of treatment by a combination of a benign operation, followed by a prolonged rest cure, would restore the patient, in so far as tissues were not already irreparably destroyed, to the bloom of health.

Dr. G. V. I. Brown, of Milwaukee, Wis., read a paper in which he described the surgical operative steps in closure of cleft palate.

### SURGERY OF THE GREAT SCIATIC NERVE.

Dr. B. M. Ricketts, of Cincinnati, Ohio, read a paper on this subject in which he reported two cases of complete severance with subsequent anastomosis. He drew the following conclusions: (1) Compression for sciatic neuralgia hardly justified the effort. (2) Acupuncture with the injection of electricity or medicaments through an open incision was to be recommended. (3) Acupuncture without open incision was most difficult and uncertain to accomplish. (4) The use of a metal wire and tube for direct multiple injections should be encouraged. (5) Stretching the nerve for neuralgia had been more or less beneficial, and second in choice before more radical measures were employed. (6) Neurotomy without suture was to be condemned, but it should be employed before sacrificing any of the nerve tissue. (7) Neurectomy was the last of surgical measures to be employed for neuralgia. (8) Neurorrhaphy (primary or secondary) should be done in cases where the nerve had been partially or completely severed by any cause. (9) The great sciatic nerve might be completely divided and remain

so indefinitely without great loss of sensation. (10) Both sensation and motion might be improved or completely restored by coapting the severed ends with sutures. (11) Small needle and silk were attended with less trauma than those of larger size. (12) Anesthesia might be local or general.

### OFFICE TREATMENT OF ANTRAL DISEASE.

DR. WILLIAM W. PENNELL, of Mt. Vernon, Ohio, stated many simpler forms of empyema were amenable to office treatment. The requisite amount of drainage could be made under cocaine anesthesia. There were cases where tooth extraction and curettement and closure of the alveolar fistula had to be practiced, but these were made simpler by efficient drainage, astringent washes and cleanliness. Even the graver forms were made more amenable to radical operation where drainage and washings had been practiced as preparatory treatment. After drainage had been established, washes of sterile normal salt solution were only medicaments used in simple empyema; while in those having dental complications, extraction of teeth, and those having thickened antral membrane from prolonged inflammation, curettement and the use of astringents were added to the simple washes.

### SURGERY OF MUSCULOSPIRAL PARALYSIS.

DR. A. H. BARKLEY, of Lexington, Ky., read a paper on this subject in which he drew the following conclusions: (1) Many cases had been operated on, but comparatively few reported. (2) In cases of trauma, associated injury of the musculospiral nerve might be and frequently was overlooked. (3) The anatomical position of this nerve rendered it peculiarly liable to trauma. (4) Injuries, such as fractures, falls and blows, were the most frequent cause in the order named. (5) It occurred with equal frequency in both arms, the middle and lower third being the most often affected. (6) The musculospiral was injured more often than any other nerve and not infrequently served as ground for legal action. (7) More frequent in males and might occur at any age, more especially between ten and thirty years. (8) In cases where complete loss of sensation and motor function followed severe injury, the probabilities were that the nerve had been injured and operative interference was indicated. Cases following slight trauma often recovered without operation; however, if no improvement was noticed after two or three months, operation was justified. (9) Secondary cases sometimes presented technical difficulties not present in primary cases. (10) No one symptom was pathognomonic and the pathological condition varied so widely that it was impossible to state before operation with much certainty the exact condition present in a given case. (11) Prognosis was good in clean cases. Especially was this true where operation had been restored too early. One of the most important determining factors was the length of time the injury to the nerve had existed. (12) Operative treatment depended on the individual case; the earlier the operation, the better the result. Small round needles and fine silk had given best results in the hands of the writer. (13) All patients with injuries to the arm, especially fractures, should be impressed with the possibility of musculospiral development.

### THE ACUTE ABDOMINAL MANIFESTATIONS OF SYPHILIS.

DR. LOUIS A. LEVISON, of Toledo, Ohio, in a paper on this subject, summarized as follows: (1) Syphilis showing acute abdominal manifestations was not uncommon, but was not generally recognized. (2) The liver was the organ most often affected. (3) Abdominal manifestations occurred more often in the tertiary stage. (4) Syphilis of the stomach could simulate most of the ordinary gastric diseases. (5) The symptoms of acute abdominal manifestations of syphilis were in no way diagnostic and included pain, tenderness, fever, jaundice, chills and sweats. (6) The gastric crises of tabes might be considered syphilitic in their nature.

### THE WASSERMANN SERO-REACTION TEST.

DR. W. T. MEFFORD, of Chicago, spoke on the value of this test to the physician. As to what class of patients he would recommend for a Wassermann test, he would say that all persons giving a history of syphilis, either inherited or acquired, and all persons with clinical symptoms simulating syphilis, and in late manifestations of syphilis. He would use it as he would a urinary or sputum examination, or blood count, placing the Wassermann test side by side with these as an assistance in making up the clinical findings. In all cases where he got a positive Wassermann or an active syphilis either alone or associated with other diseases, he would put the patient upon mercurial treatment. Of all conditions in which syphilis was associated, where he got the best results in treatment had been in syphilis associated with the heart and arterial system. Next, the liver. He had not got the improvement in tuberculosis associated with syphilis that he expected or had hoped for by specific treatment, or the treatment of syphilis.

### PYLORIC STENOSIS IN THE INFANT.

DR. W. D. HAINES, of Cincinnati, Ohio, reported a case on which he had operated for the relief of this condition. The child was removed to a hospital and a posterior no-loop gastro-jejunostomy was performed. Twenty-four hours after the operation the child showed no distress after taking nourishment and had continued free from his old symptoms. Except constipation, all of the symptoms had disappeared, and though still under size the child was thriving and playful five months after operation.

### PLEURAL EFFUSIONS, THEIR DIAGNOSIS AND TREATMENT.

DR. E. B. MONTGOMERY, of Quincy, Ill., in this paper pointed out the importance of early diagnosis, and, as a means of deciding doubtful cases, in addition to auscultation and percussion, needling, not only once, but repeatedly, if necessary. The use of sodium salicylate was advised as a medical treatment of small serous effusions, to be followed by aspiration if the fluid did not disappear in ten days or two weeks. For empyema the importance of a bacteriological diagnosis of the character of the infection was urged as a preliminary to correct treatment. Some pneumococcus empyemas yielded readily after aspiration to injection of 2 oz. of 2% formalin-glycerin. Others required intercostal incision and continuous drainage by one of the various types of drainage tubes, rib resection being rarely called for. To hasten the cure of small empyematous cavities and fistulæ, attention was called to the value of injections of Beck's 33% bismuth-vaseline paste.

### ETIOLOGY OF THE FUNCTIONAL NEUROSES.

DR. ELEANORA S. EVERHARD and DR. GERTRUDE FELKER, of Dayton, Ohio, contributed a joint paper on this subject in which they drew the following conclusions: (1) That the common element in the attributed causes of the functional neuroses was to be found

in the fact that the mental processes were not directed; therefore, the patient was the victim of any stimulus which chance might keep before the mind, and that there was no limit to the destruction of efficiency which might result. (2) That those symptoms commonly called nervousness were worthy of serious consideration because they indicated some degree of lack of control of nerve processes. (3) That self-indulgence by training the mind to follow the lines of least resistance predisposed to these neuroses. (4) That the value of living in accord with the laws of hygiene could not be overestimated, both because of its influence upon nutrition and because it required a measure of self-control, but that alone was insufficient. (5) That conditions of life which demanded of the individual in his vocation or avocation, less exercise of attention and will than he was capable of enduring without fatigue, bore to his nervous system the same relation that lack of muscular exercise bore to his muscular system. (6) That intelligent education at any age was effective, but since the ideal was prevention, the habit of directing mental processes should be established early.

Dr. Charles F. Read, of Hospital, Ill., spoke of the psychic factors in the causation of certain functional psychoses, and presented clinical studies.

Dr. Liston H. Montgomery, of Chicago, read a paper in which he spoke of the rôle of the physician, philanthropist, publicist and politician, regarding a federal department of health. He said that when a national department of health was established it would be capable of rendering the greatest amount of good to the greatest number of happy people, and thereby the prospects of longevity of man, ideal citizenship and posterity would be greatly enhanced, for which the medical profession would stand as sponsor.

### STANDARDIZATION OF BACTERINS.

Dr. Roswell T. Pettit, of Ottawa, Ill., spoke of the value of bacterin therapy as a general aid to local treatment in certain types of bacterial infections which was at the present time pretty well established. In the preparation of vaccines he did not try to estimate the number of bacteria present in a given volume. He took up a twenty-four-hour blood agar growth of streptococci in a definite amount of salt solution, shook thoroughly, centrifuged to throw down the clumps, put in a bottle specially prepared and killed by heat or carbolic acid. Then he made a one-tenth of one-hundredth dilution of this full emulsion and gave an initial dose of 5 ccm. of the one-hundredth dilution. This induced very little or no reaction. The dosage was then increased up through the one-tenth dilution and full emulsion to the point of local reaction. Then he proceeded very slowly, keeping in mind that the reaction induced and results obtained were the true indices of dosage. The reaction to be aimed at was a slight or moderate local reaction, an area of redness about the size of a dollar, without the localizing or general phenomena. By using increasing doses up through a series of dilutions this could be procured with a fair degree of accuracy, and an estimation of the number of bacteria used was entirely superfluous. The full emulsion could be called 100%, and 10% and 1% dilution of this full emulsion made. The doses could be recorded as 1, 2, 5, 7, ccm. etc., of the 1%, 10% or 100% emulsions. The advantages of a dilution method of estimating bacterial suspensions over a numerical were several. (1) The reaction, the real index of dosage, was relied upon and the empirical administration of bacterins was made less possible. (2) An index of antibody production was aimed at. (3) By using this method vaccines could be prepared with much greater rapidity, at least an hour was saved on each bacterin prepared, and if bacterins proved to be of value in acute infections, and the recent work of Dr. Rosenow, of Chicago, on artificial immunization in pneumonia seemed to point to this direction, the time saved would be a very important factor.

Dr. Nathan Rosewater, of Cleveland, Ohio, read a paper in which he pointed out the non-operative treatment of the prolapsed and dilated stomach and abdominal viscera.

### TREATMENT OF PERNICIOUS ANEMIA ASSOCIATED WITH ACHYLIA GASTRICA.

Dr. Alfred C. Croftan, of Chicago, submitted a clinical report in regard to the treatment of a certain group of pernicious anemia cases and described three cases that had been improved rapidly and have remained symptomatically well, without remissions, until the present date. The one constant factor observed in the cases of pernicious anemia observed during a period of years that were not distinctly attributed to the effect of syphilis, carcinoma, parasites or profound and continuous loss of blood was a lack of hydrochloric acid from the stomach contents, associated with a variety of digestive disturbances, allied with varying degrees of chronic undernutrition. That all cases of hyperchlorhydria and all cases of chronic undernutrition did not develop pernicious anemia called for the inclusion of some specific factor or factors hitherto unknown. At all events, the supplying of large quantities of hydrochloric acid together with abundant proteids by mouth and by rectum seemed a favorable point of attack and was persistently carried through with gratifying results. The dosage, technic of proteid, overfeeding and the general hospital management of such cases were described in full. From the results obtained the conclusion was drawn that a trial of this plan in this group of cases was decidedly worth while and seemed to produce results not otherwise obtainable by any means so far described.

### THE DIAGNOSIS OF TRIFACIAL NEURALGIA.

Dr. Hugh T. Patrick, of Chicago, stated in the vast majority of cases the diagnosis of the tic douloureux should be easy and certain as the traits of the disease were few and striking. But the author had had quite a number of other disorders referred to him as trifacial neuralgia. The most frequent had been migraine and sinus disease. Others were syphilis, brain tumor, alveolar abscess and other dental disease, nasal disease, herpes zoster, neurasthenia and lesion of the optic thalamus.

The pain of trifacial neuralgia was practically unique. There was nothing else just like it. It was short and sharp, in the beginning only a flash or jab or shot. The interval might be anywhere from a second or two to weeks or months. In the fully developed disorder the paroxysms might last a minute or two and the free intervals be so short that the pain seemed continuous. It never really was so. Nearly every patient had intermissions of weeks, months or even years during which he was entirely free from pain. One of the most striking peculiarities of the affection was that the paroxysms or jabs of pain were started by slight peripheral irritation, such as washing the face, using a handkerchief, stroking the mustache or the touch of a glass to the lips. He thought that the automatic act of winking often acted as an excitant. Such slight sensory stimulus in the area of one division of the nerve might occasion pain in another division. For instance, touching the lower lip might start a pain not in this region, but in the supra-orbital area.

### WATER THE MAIN FACTOR IN THE PREVENTION OF DISEASE.

DR. J. C. MINOR, of Hot Springs, Ark., stated the significant points in his paper were: First, nutrition and elimination were the main factors in maintaining health, but of the two, elimination was absolutely necessary and must be continuous and invariably performed equally by the sewers of the body. There was little or no vicarious action in the emunction of health and disease. You could not flush sewers without water, and if regular flushing was to be had, the water must be furnished the body regularly, and the purer the better. Second, normal resisting power prevented invasion of any and all diseases. Normal resisting power depended upon normal distribution of food, normal lubrication of all body structures and normal excretion of all waste products. Third, unless food be distributed to the system properly it would become a detriment instead of help to the system. It could not be distributed to the system properly without the proper amount of water taken in at the proper time. The stomach was the kitchen in which pabulum was prepared for the system. The small intestine was the table from which the system was served. The system would be served with only just enough, the remainder of the ingesta was thrown through the cecal valve into the sewer. If food was badly digested, the system rejected it. If food be more than the system required, the surplus was also rejected. All the rejected food was an irritant to the cecal region and its continuity. May it not be a cause for appendicitis? Fourth, there was a proper time for taking the proper amount of water. One's judgment should govern the measure of water to be taken with food. To take too much water just before, during or just after a meal would, so to speak, be to put the fire in the kitchen out, while not enough fluid would compel the stomach to borrow too heavily from the systemic volume. The one would retard digestion, and the other would give imperfect digestion.

### THE GRADUAL EVOLUTION OF A SANE THERAPY IN TUBERCULOSIS.

DR. F. M. POTTENGER, of Monrovia, Cal., contributed a paper on this subject. Among other things he said: The position of the sanatorium in the rational treatment of tuberculosis was very important. If the sanatorium was conducted on the proper lines, it afforded the best circumstances under which the known measures which had influence in building up and curing the patient might be applied. The home treatment, however, was one of the greatest boons to tuberculous patients because most patients were not able to be treated in sanatoria and must be treated in their own homes. The true position of home treatment, however, could be readily understood by the fact that it was an attempt to apply sanatorium régime and sanatorium conditions to the home.

### INTESTINAL SURGERY WITH A DEMONSTRATION OF A A NEW METHOD OF SUTURING THE BOWEL.

DR. A. E. BENJAMIN, of Minneapolis, Minn., stated the various instruments and appliances formerly used to facilitate the surgeon in his work upon the intestines had about all been discarded for the simple but efficient method of intestinal anastomosis by thread and needle. The work should be carefully but rapidly performed, which was often the case where the surgeon had from practice or experimental work upon the lower animals become skillful in the use of needle and thread. A positive blood supply to the tissues making up the anastomosis was necessary. The end-to-end method was not so certain; therefore the side-to-side anastomosis should be chosen when convenient. The evolution of the intestinal suture had brought them to the point where they were certain of good results, when the sutures were properly applied and were of the right material. Non-absorbable suture material should be cast off into the lumen of the intestine after serving its period of usefulness, and this was best accomplished when used for the inner layer. There was then less destruction of tissue. When placed externally it produced unnecessary adhesions, plastic exudate and fibrous bands. It might interfere with proper bowel function, because of its prolonged irritation. Absorbable suture material used for the outer layer was soon taken care of and did not cripple the action of the intestine. The application of the suture in the intestinal work had been carefully studied. It must serve the purposes of controlling hemorrhage, proper coaptation of the tissues, security against leakage, must avoid pursing, be quickly introduced and not strangulate the tissue. The back lock-stitch of Pagenstecher's thread as applied by the author for the inner layer served all these purposes. Experimental work had demonstrated that chromic catgut lasted sufficiently long when employed as the outer suture for positive and firm union to occur. The after-treatment of cases of suturing the bowel should be carefully supervised by limiting the diet, starvation treatment, if necessary, until the union was sufficiently strong before it became necessary for the bowels to be called upon to pass their contents onward. A perfect, clean and satisfactory result was obtained with the inner Pagenstecher lock-stich, and a chromic catgut for the outer in intestinal anastomosis.

### THE RÔLE OF THE BACILLUS COLI COMMUNIS IN ACUTE AND CHRONIC DILATATION OF THE STOMACH.

DR. FENTON B. TURCK, Chicago, presented some facts with reference to the rôle of the bacillus coli in the gastro-intestinal tract in producing lesions in the liver, kidney, stomach and other organs. Experiments were begun with intravenous and intraperitoneal injections into dogs, rabbits, guinea pigs and rats. The results obtained were variable and inconstant. On feeding animals with bouillon cultures of the bacillus coli daily over a period ranging from three to fourteen months, lesions were found in the stomach, duodenum, liver, kidney, brain and spinal cord, varying according to the methods, quantity and character of culture. It was found that animals fed with cultures of bacillus coli would acquire acute or chronic dilatation of the stomach by overworking or overloading that organ. Examination of the blood showed that it remained sterile during the experiments, and the heart's blood at death was also sterile. In feeding cultures of the colon bacillus, pronounced changes were revealed in the blood and tissues. Agglutination of bacillus coli by the dog's serum was noted, hemolysis of the blood was evident; cytolysis and autocytolysis of the cells of the mucous membrane of the stomach, kidney, liver and other organs were marked on microscopic examination. The picture was not one of resection to an infection, but rather a systemic condition of induced cellular change. To obtain spontaneous acute or chronic dilatation of the stomach in animals, it is necessary to first feed the animals with cultures of bacillus coli over a long period of time, followed by over-use of the stomach, especially increasing the intragastric pressure. Acute and chronic dilatation of the stomach was due to the fatigue of the gastric muscles.

The author pointed out the indications for treatment in acute dilatation of the stomach.

The usual methods of treatment were gastric lavage; diet, frequent but light meals; drugs, such as tonics, laxatives, alkalies, or acid, as indicated; electricity and exercise; hydrotherapy, balneology, rest and recreation. In case of failure of the above methods, surgical operation was indicated.

For the last seventeen years he had followed these indications and methods: (1) Reduce the fatigue of the gastric muscle by rest, followed by appropriate exercise of the gastric muscle, inducing normal peristalsis. (2) Sterilization, as far as possible, of the gastro-intestinal tract. (3) Restore the integrity of the splanchnic circulation.

OFFICERS.

The following officers were elected: President, Dr. Robert H. Babcock, Chicago; Vice-Presidents, Drs. Arthur D. Holmes, Detroit, and Charles E. Barnett, Fort Wayne, Ind.; Secretary, Dr. Henry Enos Tuley, Louisville (re-elected); and Treasurer, Dr. S. C. Stanton, Chicago (re-elected).

The selection of the place of meeting and of the chairman of the Committee of Arrangements for 1911 was left to the Executive Committee with power to act.

## Book Reviews.

*The Non-Surgical Treatment of Duodenal Ulcer.* By GEORGE HERSCHELL, M.D. (Lond.). London: Henry J. Glaisher. 1910.

This publication is the reprint of an article by the author which originally appeared in the *Clinical Journal*, and states rather categorically his views on the medical treatment of duodenal ulcer. He believes this condition usually due to pyorrhea alveolaris, to intestinal auto-intoxication, or to anemia. Its rational treatment, therefore, he bases on the removal of these causes by remedying deficiencies in the blood, by disinfecting the intestinal tract and by reducing the acidity and peptic power of the gastric juice. This third end he attempts by the administration of alkalies and bismuth and of bland, tasteless panada, preceded by several days of rectal feeding. He also gives injections of fibrolysin for any adhesions which may be present. He requires the patient to remain in bed three weeks under this regimen. To avert recurrence, he recommends the subsequent wearing of an abdominal support to prevent traction on the mesentery, and a dose of normal horse-serum daily for a month, then twice a week for another month. His method seems logical and deserving of trial and observation.

*A Text-Book of General Bacteriology.* By EDWIN I. JORDAN, Ph.D. Fully illustrated. Second edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company. 1910.

This second edition of a well-known general textbook on bacteriology adds to the original several new sections on the most recent progress in the science. Without being elementary, the work is introductory rather than advanced in character and aims especially to emphasize the relations of bacteriology to various professional and human interests. Besides the descriptive bacteriology, there are chapters on immunity, on the bacterial diseases of plants, on the pathogenic trichomycetes and protozoa, and an appendix on infectious diseases of unknown causation. The illustrations are many and excellent. The volume is a useful general treatise on the subject rather than a laboratory manual, and should be of interest to general readers as well as of value to medical and other students.

*A Manual of Midwifery.* By HENRY JELLETT, B.A., M.D., Dublin University, with the assistance in special subjects of W. D. DAWSON, M.D.; H. C. DRURY, M.D.; T. G. MOORHEAD, M.D.; R. J. ROWLETTE, M.D. Second edition. Seventeen plates, 557 illustrations in the text. New York: William Wood & Co. 1910.

Dr. Jellett and his co-writers are to be congratulated upon the appearance of the second edition of their work on obstetrics. Every chapter shows painstaking care. The text is clear and the illustrations excellent. The book covers the usual field of obstetrical textbooks, the chapters on mechanism of labor and on contracted pelves being especially good. It is to be regretted that Dr. Jellett has adopted the non-descriptive nomenclature of first, second, third and fourth positions of the various presentations, thereby doing away with the uniform nomenclature which is most helpful to students. There are many little differences in procedure which are entirely unnecessary to comment upon in a book of this character and authority. It has been a pleasure to read and study this book, and we hope that it will have a wide sale in America.

*A Manual of Obstetrics.* By A. F. A. KING, A.M., M.D., LL.D., Professor of Obstetrics in the Medical Department of the George Washington University and in the University of Vermont. Eleventh edition, revised and enlarged. Three hundred and forty-one illustrations in text, 3 plates. Philadelphia and New York: Lea & Febiger. 1910.

One hesitates to criticise a book that has come to its eleventh edition, but there are many points in this book which do not conform to the best obstetrical teaching of the present time. The illustrations are crude and old and in many cases insufficient. The author's treatment of artifical feeding, the premature baby, nursing and weaning are most superficial and would give every pediatrist the right to say, as one prominent one has, that few obstetricians are able to look after the average feeding of a baby.

*A Textbook of Pharmacology and Therapeutics, or the Action of Drugs in Health and Disease.* By ARTHUR R. CUSHNY, M.A., M.D., F.R.S., Professor of Pharmacology in the University of London; Examiner in the Universities of

London, Manchester, Oxford and Leeds; formerly Professor of Materia Medica and Therapeutics in the University of Michigan. Octavo, 744 pages, with 61 engravings. Philadelphia and New York: Lea & Febiger. 1910.

In this new edition, the author has kept up the standard of the work as one of the best books on pharmacology in the English language. The book has been thoroughly revised and most of the new researches on pharmacology have been considered. We note, however, that in a number of instances the author, in spite of recording the newer investigations, fails to change sufficiently his text accordingly. We were pleased to see the introduction of a chapter on antitoxins, as these agents are definitely pharmacological and have usually received too little attention on the part of pharmacologists.

*Report of the (New South Wales) Government Bureau of Microbiology.* Sydney: William Applegate Gullick. 1910.

This first annual report of the new South Wales Bureau of Microbiology represents the results of its first year of work since its establishment as a separate branch of the reorganized Department of Agriculture. Its function was intended to be especially "to deal with questions concerning the parasitic and microbic diseases of plants and of stock, and with various farming problems." The work of the laboratory has been divided into two parts: first, routine examination of dairy products, plants, rats and human pathologic material; second, research in the bacterial, fungoid and protozoan diseases of animals and plants, in hygiene, sanitary and economic problems, and in the bacteriology of soils. The report presents a vast amount of data which may become the basis of much future study and profitable application. It is interesting to note that the report speaks very hopefully of the possibilities and value of antityphoid inoculation, citing the fact that of 6,866 imperial troops exposed to typhoid infection, the percentage of incidence among the inoculated was only 3.7, and among the uninoculated, 32.8. Such figures are eloquent.

*A Manual of Nursing.* By MARGARET FRANCES DONAHOE. Illustrated. New York and London: D. Appleton & Co. 1910.

This volume represents the results of the author's experience as a pupil at the Massachusetts General Hospital, and as superintendent of nurses and principal of the training school at the Philadelphia General Hospital. It consists of a series of chapters on selected topics in nursing, practical and well written, though rather sparely illustrated. It should be a useful addition to the library of graduate as well as of pupil nurses.

*Bacteriology and Surgical Technic for Nurses.* By EMILY M. A. STONEY. Third edition, thoroughly revised and enlarged by FREDERIC RICHARDSON GRIFFITH, M.D. (University of Pennsylvania), of New York. Illustrated. Philadelphia and London: W. B. Saunders Company. 1910.

Miss Stoney's textbooks on nursing are of recognized and standard merit. This new edition of the present volume contains the material of the original, with the addition of some diet recipes, more detailed description of certain operations and a brief glossary. The illustrations are numerous and excellent. The book logically presents the relations of bacteriology to surgical diseases and nursing.

*The Hygiene of Infancy and Childhood and the Underlying Factors of Disease.* By A. DINGWALL FORDYCE, M.D., F.R.C.P. (Edin.), Extra Physician, Royal Hospital for Sick Children, Edinburgh; author of "Diet in Infancy." Pp. 290. New York: William Wood & Co. 1910.

The author has endeavored in this book to correlate the primary scientific facts of medicine as they apply to pediatrics and to combine in one volume various aspects of pediatric medicine which can only be found otherwise by wide reading. He divides the factors which have to do with the development of the child, whether normal or abnormal, and with the causation of disease in childhood, into five, namely, food, heredity, environment, bacterial and age-period. An immense amount of material is considered, some of it in considerable detail, some very superficially. His conclusions are, in general, very reasonable and in accord with the most recent investigations. Much of the text is in quotation marks. We think that the book would have been more satisfactory if the author had given us his own opinions in his own words. The book will, on the whole, repay perusal.

*A Textbook of Bacteriology.* By PHILIP HANSON HISS, JR., M.D., and HANS ZINSSER, M.D. With 156 illustrations in the text, some of which are colored. New York and London: D. Appleton & Co. 1910.

The sub-title of this volume declares it to be "a practical treatise for students and practitioners of medicine." It is divided into five sections dealing respectively with bacterial biology and bacteriologic technic, with infection and immunity, with description of the pathogenic micro-organisms, with diseases of unknown etiology (rabies, smallpox, poliomyelitis, yellow fever, measles, scarlet fever and foot-and-mouth disease), and with the bacteria of the air, the soil, water and milk. Its scope is thus extensive and its intent scientific rather than popular. It is not, however, unduly technical. Of greatest interest, perhaps, are the chapters dealing with the nature and theories of infection, immunity, phagocytosis and anaphylaxis, with the various antibodies and with the general principles and technic of serology. Representing as it does the experience of its authors as teachers and investigators, the book should prove of authoritative merit and of recognized value to the profession.

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## INACCURACY OF VITAL STATISTICS IN THE UNITED STATES.

IN an editorial on the "Responsibility of Physicians for Vital Statistics," on page 29 of the issue of the JOURNAL for Jan. 5, we commented on "the importance of reliable vital statistics as a basis not only for scientific research, but also for the hygienic and sanitary measures of preventive medicine and for many sociologic reforms." A bulletin just issued from Washington, D. C., by the Bureau of the Census of the United States Department of Commerce and Labor, reiterates this statement, and directs further attention to the inadequacy and unreliability of such statistics in many parts of our country. The death registration area of the United States now comprises only about 55% of the total population, the birth registration area is smaller, and even within these areas the records are often incomplete and inaccurate. No foreign nation of equal claim to civilization is as deficient in this respect as the United States.

Of the degree of reliability of such vital statistics as we have, it is harder to form a just estimate. In the December, 1910, issue of *Assurance*, a New York publication devoted to the problems and interests of life insurance, appeared a somewhat polemic article by Lawrence Irwell, of Chicago, criticising certain statements and figures in Professor Fisher's "Report on National Vitality" and his paper on "The Costs of Tuberculosis in the United States and Their Reduction," both recently published in bulletins of the Committee of One Hundred on National Health. The essence of Mr. Irwell's contention is that the decline in mortality from tuberculosis in this country and in others, which Professor Fisher attributes "to the growing use of hospitals . . . and of our recently acquired knowledge of the efficacy of fresh air and the outdoor life," had really begun some decades before Koch's discovery of the tubercle bacillus, and has been due less to artificial human agencies than to the great process of natural selection. Furthermore, Mr. Irwell maintains that many of the statistics which Professor Fisher employs to prove his points are unreliable and misleading, owing to inaccuracies in registration above alluded to. Mr. Irwell analyzes some of these statistics and points out their fallacies. His conclusion is that the decline in mortality from tuberculosis throughout the world in the past thirty years is not nearly as great as has been maintained, and that what decline has occurred has taken place rather from natural causes than from the efforts of preventive medicine.

Whatever the respective merits of the conflicting opinions of Professor Fisher and Mr. Irwell, which could be determined only by much more extensive examination of available data, the case in point is an illustration of the uncertainties involved in vital statistics and their interpretation, and of the extreme caution which should be observed in making or accepting any conclusions deduced from them. Such conclusions can become reliable only when the figures from which they are drawn become so. The bulletin of the Census Bureau, to which we earlier referred, closes with these appropriate words on the subject:

"The accurate collection, tabulation and analysis of records of births, deaths, stillbirths, marriages, divorces and sickness may be said to constitute the bookkeeping of humanity. It is fundamental to the practical application of hygiene to secure higher efficiency, longer duration of life and fuller measure of happiness."

## PROTECTION OF INFANTS AND CHILDREN.

THE strong tendency toward prophylactic medicine is nowhere better exemplified than in the various efforts being made toward the better care of children and infants. The general controversy which has been going on in New York over milk depots has apparently finally been settled in favor of the continuance of such rational means of averting infant mortality. The plan, inaugurated in connection with tuberculosis, of popular exhibits also finds a place in connection with the work for children, as illustrated by the recently opened New York Child Welfare Exhibit, which is to be continued until Feb. 12, with

a special program for each day. The design is to present a complete and comprehensive exposition of the influences which affect the life of the city child for good or for evil and to demonstrate the economy of concentrating efforts for human betterment upon the children of the present time and so of lessening the social waste and financial burden of charities and reformatories in the future. At the opening exercises addresses were made by Robert W. DeForest, of the Sage Foundation, and others, and there was singing by a chorus of one thousand public school children. The exhibits are on the general plan of the tenement-house and tuberculosis exhibitions held previously in the city, and each day conferences on presented subjects are held by physicians, educators, social workers and municipal representatives. A large central court provides exhibition space for motion pictures, and for the folk-dancing, gymnastic excercises, and musical, song and play festivals in which 3,000 children take part, while the surrounding galleries accommodate 2,000 spectators. More specifically the purposes of the exhibit are: (1) To show the work of all agencies now striving for the child's welfare and to encourage their correlation, improvement and extension. (2) To throw light on forms of city life detrimental to the child, and to suggest definite remedies for these conditions. (3) To stimulate the formation of some complete program of action dealing with all the needs of the city child.

The committee on infant mortality of the New York Milk Committee held an open meeting at the Hotel Plaza, on Jan. 16, to further the movement undertaken by the committee to obtain an annual fund of $300,000 for the purpose of maintaining sixty additional infants' milk depots, each with physicians and trained nurses in attendance. Controller Pendergast presided, and addresses were made by Dr. Abraham Jacobi; Wilbur C. Phillips, secretary of the New York Milk Committee; Mrs. J. Borden Harriman, vice-chairman of the Committee on Infant Mortality, and others. Mr. Pendergast stated that the city government was in complete sympathy with the movement, citing the recent appropriation of $40,000 by the Board of Estimate for the establishment of milk depots as an evidence of this. He believed, however, that the city should finance only a part of the work, and that the rest should be undertaken by the citizens. Dr. Jacobi was emphatic in his endorsement of the work done by the milk depots, not only in furnishing good milk for infants, but for the educational value of the instructions of the physicians and nurses. He also emphasized the need of complete co-operation among those interested in this work, believing that such co-operation would mean the saving of the lives of thousands of children. Mr. Phillips showed how the money was spent and what was accomplished. At the close of his remarks pictures were thrown on a screen illustrating the work of the milk depots. Mrs. Harriman explained how the city had been districted and appeals for financial help sent out, how the plan undertaken had been approved by the best informed social workers and child specialists in the medical world, and how the work was related to the Health Department.

## LIFE INSURANCE AND PREVENTIVE MEDICINE.

THE recently published proceedings of the fourth annual meeting of the Association of Life Insurance Presidents, held in Chicago on Dec. 9 and 10, 1910, contains many interesting addresses dealing with various aspects of the important and growing work of life insurance in modern civilization. Of particular pertinence are the papers in the section on "Life Extension Work." It is, of course, to the pecuniary interest of insurance companies that their policy holders should live as long and as healthfully as possible, and for this economic reason they have somewhat unexpectedly become valuable allies of the medical profession and efficient practical workers in the field of preventive medicine. In his address before the association on "The Fight against Preventable Diseases," Dr. Eugene H. Porter, New York State Health Commissioner, after reviewing the statistics of death from such diseases, outlined the methods and details of the work which has been and may be done in this conflict by the insurance companies, whose size, capital and organization give them an almost unequalled power of usefulness. In a paper on "Modern Sanitation," Dr. Alvah H. Doty, health officer of the port of New York, described other valuable recognized methods of disease prevention by sanitation, whose establishment and enforcement may be fostered by the companies. Dr. Cressy L. Wilbur, chief statistician of the United States Census Bureau, spoke on "The Work of the Census in Vital Statistics," and emphasized the importance of uniform and complete accuracy in the registration of such statistics as a prerequisite for the study and prevention of disease and needless mortality. The machinery of life

insurance affords admirable means for the accumulation and preservation of such essential data. These papers and others illustrate admirably the possibilities of co-ordination between the work of preventive medicine and that of the insurance companies, agents whose economic and material strength the profession should be glad to enlist in its unceasing conflict with disease and death.

## REPORT AND RECOMMENDATIONS OF THE MASSACHUSETTS MILK COMMITTEE.

At the time of the "milk strike" in Boston last spring, a committee of five was appointed by the state legislature to investigate and report on the inspection of milk in Massachusetts. This committee consisted of the three members of the State Dairy Bureau, of Dr. Milton J. Rosenau, professor of preventive medicine and hygiene at the Harvard Medical School, and of Mr. George H. Ellis, a milk producer of Boston. The committee has just presented its report, with a bill embodying the provisions which it suggests. This proposed bill empowers the State Board of Trade "to make reasonable regulations regarding the sale of milk, its production, transportation and keeping"; requires that all milk dealers shall be licensed and their places of business regularly inspected, and provides for the "establishment of a milk division under control of the State Board of Health, with a chief, an assistant chief, a chief inspector and not more than twenty assistant inspectors," and authorizes the expenditure of not more than $100,000 annually for the salaries and expenses of this division.

The members of the milk committee are unanimous in their agreement that the present system of inspection is inadequate and involves much unnecessary expense and duplication of work without guarantee of security. They are also unanimous in recommending uniform inspection and control by state authority; but three of the members believe that it should be administered by a joint committee of the Dairy Bureau and the State Board of Health, whereas the other two believe that the authority and responsibility should rest solely with the Board of Health.

The bill proposed in the report of the milk committee presents a plan alternative with that of the bill already introduced before the State Senate, to which we made reference in the issue of the JOURNAL for Jan. 19. The bill recommended by the committee has apparently the advantages of providing centralised authority; of establishing a uniform system of inspection without complicated machinery or liability of conflict and of representing the opinion of experts who have given the matter careful investigation. Legislative discussion should determine the respective merits of the two measures and lead to the enactment of such laws as shall afford the greatest security to all communities in the state.

## THE FUTURE OF HUMAN LACTATION.

At a meeting of the Milk and Baby Hygiene Association of Boston, held on Jan. 23 in this city, addresses outlining the policy and describing the work of the association were made by the newly elected president, Mr. Charles W. Eliot; by the outgoing president, Mr. George H. Ellis; by the director, Mr. Walter E. Kruesi; by the medical director, Dr. Arthur A. Howard, and by Mr. John Spargo. Some of Mr. Spargo's remarks were particularly interesting, in that he seemed to suggest the possible ultimate cessation of the lactating function in woman as a slow result of social and physical evolution. Without concurring in this prophecy, it must be admitted, from certain obstetric and pediatric experiences, that it has some plausibility and that in the course of the ages the time may come when the human infant will be from birth, to use Mr. Spargo's phrase, "a parasite on the cow." This would be a condition not without biologic parallels.

## ISOLATION OF DIPHTHERIA CARRIERS IN CHICAGO.

It is reported from Chicago that the detection and quarantine of diphtheria carriers among schoolchildren is to be undertaken by the board of health in that city as a possible means of reducing the incidence of the disease. The considerable number of such "carriers" among children apparently well was indicated by the series of cultural experiments conducted by the Board of Health in Boston over a year ago. At the same time the difficulty and probable opposition to be encountered in an effort to quarantine them were considered for the present too great to justify the attempt. The experiment in Chicago, whether successful or not, should be of value, and its result should prove a useful contribution to medical experience.

In this connection it is interesting to note an article by Dr. Henry Page, of Manila, P. I., in the January number of *The Archives of Internal Medicine* on "Diphtheria Bacillus-Carriers." Dr.

Page summarises his studies of carriers, and reports a case in which was successfully employed a method of treatment first suggested by Schiotz, of Copenhagen, namely, spraying the throat with pure cultures of staphylococcus aureus, which in this case and in six reported by Schiotz was followed by disappearance of the Klebs-Loeffler bacilli in two or three days. The merits of this treatment deserve further investigation and consideration by the profession.

## THE DUST NUISANCE IN THE STREET AND THE HOUSE.

NOTHING further seems to be heard nowadays about the campaign against promiscuous expectoration in Boston. Its place in popular interest has apparently been taken by the agitation against the dry sweeping of streets, a practice long recognized by physicians as abominable, but recently brought into public prominence by various interviews on the subject published in the daily press. There can be no doubt that clouds of dust, whether stirred up by sweeping or by the wind, are a disagreeable and dangerous irritant to the respiratory tract and predispose it to infection by various organisms. It is probable that city dust also disseminates numerous pathogenic bacteria, notably those of tuberculosis. The great increase of colds, influenza, pneumonia and other respiratory infections during dry, windy weather when there is no snow on the ground is evidence in the experience of every medical practitioner that dust is a factor in their production. Various methods have been suggested to check the dust nuisance, such as sprinkling the streets with oil or with calcium chloride solution, sweeping them wet instead of dry, and hooding the sweepers with canvas covers. Popular discussion of the problem is likely to produce some good. Incidentally it would be still better if this campaign, carried into the home, should lead to the abolition of that pernicious domestic fallacy, sweeping-day, which still survives to be the curse of many a New England household.

## MEDICAL NOTES.

A SUSPECTED LEPER IN WASHINGTON. — Report from Washington, D. C., states that a young Filipino, who came to this country from the Philippines a year ago, is now held in quarantine at the United States Naval Medical School Hospital under suspicion of having leprosy. He has been employed as a servant in the family of a naval officer.

APPOINTMENT OF DR. HUMBERT. — It is reported that Dr. Eugene P. Humbert, of the Bureau of Plant Industry of the United States Department of Agriculture, at Washington, D. C., has been appointed associate biologist in the University of Maine Experiment Station. He is a graduate of the Iowa Agricultural College.

CHOLERA IN ARABIA. — Report from Hodeida, Arabia, describes the recent outbreak there of Asiatic cholera among the natives and among the Turkish recruits sent as reinforcements to the troops now fighting rebellious Arabs in the Yemen district. Hodeida is a base of supplies and munitions, and there is fear of the spread thence of a general epidemic through the army in the field.

SUCCESSFUL UNION OF MEDICAL SCHOOLS IN CINCINNATI. — The reorganised Medical College of the University of Cincinnati has just completed successfully its second year since its union with Miami Medical College. The new institution is now closely affiliated with the Cincinnati City Hospital, in which many of its professors and instructors hold clinical and laboratory appointments.

PROPOSED BREAD STANDARD IN GREAT BRITAIN. — Eight physicians in London, including Sir Alfred Fripp, are said to have issued recently a statement advocating the establishment in England of a legal standard for the nutritive value of bread, similar to the percentage standard already existing for milk. They recommend the requirement that all bread shall be made "of unadulterated wheat flour, containing at least 80% of whole wheat."

THERAPEUTIC POSSIBILITIES OF MESOTHORIUM. — Report from London announces the discovery by Prof. Ernest Rutherford, director of the physical laboratory at the Univerrity of Manchester, of a new method of extracting mesothorium from thorium. Mesothorium is a disintegration product of thorium, and stands midway between it and radiothorium. The possible medical importance of this discovery is that mesothorium, which is alleged to possess radio-active properties, is much cheaper than radium and may conceivably become of use as a substitute for it in therapeutics.

THE PLAGUE IN THE FAR EAST. — Reports from the far East indicate that the epidemic of bubonic plague is steadily extending. In Manchuria, its original focus, the fatalities are most

numerous. In Fudsiadian there are said to have been 1,500 deaths during the week ending Jan. 23. The infection has invaded Pekin, where there were 10 deaths from it in the same period. The port of Tientsin, a great wool-shipping center, has been closed. It is reported that the plague has also appeared in Amoy, and that one death from it has occurred at Pogranitchnaia, near Vladivostock, in Russia. The disease is said to be pneumonic in type and of extremely fatal virulence.

Sewage and Seawater. — In a recent paper before the British Royal Sanitary Institute, Dr. Edward Newton called attention to the increasing pollution of seawater along the coasts of Great Britain and France by sewage from the great maritime cities. Bacteriologic examinations which he has made indicate that in many places the sea is contaminated in this manner to a distance of twenty-five miles from land. Probably this condition is not so serious as the pollution of rivers, more common formerly than at present. There is a possibility, however, of the ultimate necessity of the disinfection of sewage from seaport towns, whose excreta may prove too much for

> "The moving waters at their priestlike task
> Of pure ablution round earth's human shores."

Two More Seizures of Opium. — Two large seizures of opium have been made in the United States during the past week. At San Francisco, on Jan. 25, the United States customs officers seized three hundred tins of opium, worth $12,000, after a running fight with two men who were attempting to land it in a small boat from the steamer *Korea*, which arrived in port from the Orient a fortnight previously. The smugglers escaped.

In New York City, on the evening of the same day, two Chinese "cigar stores" in the tenderloin district were raided by the police, with a resulting seizure of six hundred two-pound cans of opium prepared for smoking, and a considerable quantity of the crude drug, of a total value of $10,000. Four Chinamen on the premises were arrested, and held in $1,500 bail each, on a charge of violating the federal opium exclusion act.

## BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Jan. 24, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 50, scarlatina 53, typhoid fever 3, measles 81, smallpox 0, tuberculosis 54.

The death-rate of the reported deaths for the week ending Jan. 24, 1911, was 20.74.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, Jan. 28, 1911, was 277, against 231 the corresponding week of last year, showing an increase of 46 deaths, and making the death-rate for the week, 20.97. Of this number 142 were males and 135 were females; 267 were white and 10 colored; 166 were born in the United States, 103 in foreign countries and 8 unknown; 51 were of American parentage, 187 of foreign parentage and 39 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 50 cases and 2 deaths; scarlatina, 50 cases and 1 death; typhoid fever, 5 cases and 1 death; measles, 79 cases and 3 deaths; tuberculosis, 76 cases and 25 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 37, whooping cough 4, heart disease 36, bronchitis 1. There were 16 deaths from violent causes. The number of children who died under one year was 46; the number under five years, 74. The number of persons who died over sixty years of age was 76. The deaths in public institutions were 108.

Death-Rate in Malden. — The annual report of the Malden (Mass.) Board of Health states that the death-rate in that city during the year 1910 was 13.6 per thousand.

A Living Centenarian. — Mrs. Laurena S. Lea, of Pittsfield, Mass., celebrated last week the supposed centennial anniversary of her birth. Her health is said to be excellent. She has one living daughter and eight grandchildren and great-grandchildren.

A Bill to Permit Unvaccinated Children to Attend the Public Schools. — A bill accompanying a petition to permit unvaccinated children to attend the public schools was given a hearing before the joint committee on Public Health of the Massachusetts Legislature on Tuesday, Jan. 31.

Fire at the Cushing Hospital. — A slight fire in the laundry of the Cushing Hospital, Roxbury, on Jan. 24, caused damage to the estimated amount of $1,500. A grass bonfire, set by boys, in an adjacent field was the cause, and for a time menaced also the Baptist and Charity Club hospitals.

FINE FOR ILLEGAL SALE OF BUTTERINE. — In the Newton District Court last week, a restaurant keeper of West Newton, Mass., was fined $10 for serving butterine to his customers without posting, as required by law, a notice of the fact that he was doing so.

A DOCTOR'S BEQUEST TO THE NASHUA HOSPITAL. — The will of the late Dr. George F. Wilber, of Nashua, N. H., whose death is noted in another column of this issue of the JOURNAL, was presented for probate on Jan. 27. It names as residuary legatee, the Nashua Emergency Hospital, which will probably receive about $60,000 from his estate.

REPORT OF THE DEACONESS HOSPITAL. — At the annual meeting of the New England Deaconess' Association, held in Boston on Jan. 24, the superintendent of the Deaconess' Hospital in Longwood reported that during the year 1910 1,051 patients were received into that institution. There were also reports of other charitable and philanthropic activities of the association.

RATIO OF MARRIAGES AND BIRTHS IN MASSACHUSETTS. — The annual report of the secretary of the Commonwealth of Massachusetts, published last week, contains, among interesting data, the returns of births, marriages and divorces in this state for 1909. During that year there were 1,931 more marriages and 231 more divorces, but 2,872 fewer births than in 1908. The medical and sociologic suggestions of these figures are obvious and in many respects depressing.

MASSACHUSETTS ASSOCIATION OF BOARDS OF HEALTH. — A quarterly meeting of the Massachusetts Association of Boards of Health, held in Boston on Jan. 26, was attended by about one hundred members. Papers were presented on "Modern Board of Health Methods in a Small Town," "Modern Board of Health Methods in a Small City" and "The Relation of Illuminating Gas to Public Health." Dr. Henry P. Walcott, of Cambridge, Mass., was elected president of the Association for the ensuing year.

WORK OF THE MASSACHUSETTS HOMŒOPATHIC HOSPITAL. — At the annual meeting of the corporation of the Massachusetts Homœopathic Hospital, held in Boston last week, it was reported that during the past year 12,036 patients were treated in the out-patient department, 4,925 in the hospital wards, and 483 in the contagious department. During the year some permanent building improvements were made. The hospital also received from Mrs. Robert Dawson Evans a sum sufficient to erect a building, now under construction, for clinical research and the study of preventive medicine, with a fund of $100,000 for its permanent endowment. During 1910, 27 nurses graduated from the hospital training school and 46 probationers were admitted.

REPORT OF THE CHILDREN'S HOSPITAL. — The annual meeting of the managers of the Children's Hospital of Boston was held on Jan. 25. It was reported that during 1910 the number of patients admitted to the wards showed an increase of 61 over the previous year. The out-door relief has been reorganised under the name of the social service department, and its activities considerably extended. During the year, 2,125 visits were made by the three nurses in charge of this work. The receipt of bequests from various estates was acknowledged to the total of $44,613. It was announced that a sufficient sum of money has now been raised to warrant the erection of the proposed new buildings of the hospital on Longwood Avenue, and it is hoped that work on their construction may be begun during the coming spring.

### NEW YORK.

BONE AND JOINT SURGERY. — Dr. John B. Murphy, of Chicago, president of the American Medical Association, gave a special clinic at the New York Post-Graduate Medical School, Jan. 6, on "Bone and Joint Surgery."

BEQUESTS. — Among other bequests in the will of Mrs. Emily H. Moir, of New York, who died on Dec. 23, leaving an estate valued at $1,000,000, are $20,000 to the Presbyterian Hospital, $10,000 each to the New York Eye and Ear Infirmary, the Society of the Lying-In Hospital, the Minturn Hospital for Scarlet Fever and Diphtheria, and the Babies' Hospital of the City of New York, and $5,000 each to the Northern Dispensary and the Nursery and Child's Hospital. Of the residuary estate, one quarter goes to the Presbyterian Hospital and one twelfth (estimated at $60,000) each to Harvard and Princeton universities.

PRIORITY IN DEATH FROM ACCIDENT. — The important question, where property is involved, of deciding in cases where two persons of a family die from accidental causes almost at the same instant, is often a very difficult one. This is shown in the deaths of J. George Lafargue and his wife, Henrietta, who were killed by the

striking of their automobile by a railway train in August, 1906. In the Surrogate's Court it was decided, after prolonged medical and legal disputation, that the husband died first, but this decision was recently reversed by the Appellate Division of the New York Supreme Court. An appeal from this finding has been taken, and the issue will now have to be fought out again in the highest tribunal of the state, the Supreme Court. Both Mr. and Mrs. Lafargue left wills, and in each of these different sets of heirs were named.

## Current Literature.

### New York Medical Journal.

#### Jan. 7, 1911.

1. Boldt, H. J. *The Treatment of Gonorrhœa in Women.*
2. Powers, C. A. *Primary Sarcoma of the Appendix.*
3. Stevens, G. T. *A Series of Studies of Nervous Affections in Relation to the Adjustments of the Eyes.*
4. Gordon, A. *Optic Nerve Changes Associated with Cranial Malformations.*
5. Butler, G. F. *Twilight Talks with the Doctor.*
6. Wandless, H. W. *Lymphoid Degeneration of the Conjunctiva.*
7. *Moschowitz, E. *Eosinophilia and Anaphylaxis.*
8. Talmey, M. *Manic-Depressive Insanity or Recurrent Insanity?*
9. Ruden, S. T. *End Results of Surgical Operations on Nervous Women.*
10. Smith, L. L. *Report of a Case of Diphtheria of the Vulva in a Child Three Years of Age.*

7. Moschowits draws a striking comparison between the phenomena of experimental anaphylaxis and such diseases as asthma, hay fever and urticaria, and he suggests that these latter may be manifestations of an anaphylactic reaction in the human organism. The characteristic symptoms of "serum disease" are dyspnœa, cyanosis, urticaria and eosinophilia. This seems more than a coincidence and should stimulate research. [L. D. C.]

#### Jan. 14, 1911.

1. Beck, C. *A Few Neglected Points Concerning the Treatment of Fractures, with Special Reference to Those of the Leg.*
2. Mason, F. S. *How Pure Milk Cultures of Lactic Ferments may be Obtained.*
3. Elmer, W. S. *Stereoscopic Photography with a Single Camera. Some Points in Optics and Physiology.*
4. Girsdansky, M. *A Simple Method of Viewing Röntgenograms in Three Dimensions.*
5. Felberbaum, D. *The Identification of the Tubercle Bacilli by Means of Antiformin.*
6. Sill, E. M. *Studies of Diet, Nutrition and Growth in Childhood.*
7. *Cornwall, E. E. *The Heart in Lobar Pneumonia and Its Treatment.*
8. Wiener, S. *A Case of Toxic Hematoporphyrinuria (Saffron) Complicating Septic Perforation of the Uterus.*

7. Cornwall maintains that mechanical obstruction in the lesser circulation is a more important cause of heart disturbance in pneumonia than is the toxemia of the disease. From a therapeutic point of view, therefore, a case of pneumonia is essentially a heart case. He hastens to add, however, that elimination is a very important part of the treatment. [L. D. C.]

### The Journal of the American Medical Association.

#### Jan. 21, 1911.

1. Gilmer, T. L. *Report of Six Cases of Composite Odontomes.*
2. Gardner, W. S. *Infections of the Endometrium.*
3. Edwards, E. G. *Perforation of the Uterus and Transfixion of Contiguous Mesentery and Peritoneum by Bone Crochet Needle.*
4. Haase, M. *A Chronic Itching Eruption of the Axilla, Pubes and Breast.*
5. Marshall, M. *Report of Seven Cases of Syphilis Treated with Salvarsan.*
6. Meehan, J. W. *An Interesting Case of Confusional Insanity.*
7. Vandwert, A. H., and Mills, H. P. *Foreign Material in the Stomach.*
8. *Sachs, T. B. *Diagnostic Value of Local Tuberculin Reactions.*
9. *Fordyce, J. A. *The Modern Treatment of Syphilis with Reference to the Recent Syphilitic Preparations.*
10. Williams, T. A. *Treatment of the Pains of Acute Anterior Poliomyelitis.*
11. Gwinn, G. E. *Simple Complete Tonsillectomy.*
12. Eshner, A. A. *A Case of Tabes Dorsalis without Ataxia.*
13. Charlton, F. R. *What Becomes of the Spirochetes in the Secretions?*
14. Young, W. G. *Two Appendices in One Person.*
15. Rous, P. *Transmission of a Malignant New Growth by Means of a Cell-Free Filtrate.*
16. Doederlein, T. J. *Pyelitis Gravidarum.*
17. Everall, B. C. *Abdominal Diphtheria.*

8. Sachs considers that the reactions occurring on application of tuberculin differ in their degree according to the various sites of the body selected as points of inoculation. The results of cutaneous tests performed with various dilutions of tuberculin would seem to indicate that the actual amount of absorbed tuberculin is a factor of importance in determining the degree of the reaction. Sufficient evidence has not been produced so far to substantiate the claim that a positive conjunctival reaction signifies active tuberculous disease.

9. Fordyce considers that two things which contribute to our failure to cure more cases of syphilis and to prevent the late or parasyphilitic stages are the tendency to regard syphilis as a mild infection and become lax in carrying out treatment and the lack of familiarity with the great possibilities of specific drugs. The old method of administering mercury internally in small doses over long periods of time is not only inefficient, but, in the light of recent developments, may be harmful in the possible cultivation of mercury-fast strains of spirochetes. The best results are obtained when the drug is administered by intramuscular injection or by inunction or by a combination of both. As regards salvarsan, except in a limited number of cases this drug in a single dose has not fulfilled its promise of a specific in human syphilis. It is, however, a most efficient agent in controlling the early manifestations of the disease and in limiting the contagious stage when mucous patches and condylomata are present. The result of one injection is fully equal to that of a prolonged course of mercury in the early stage and to a combination of mercury and KI in the later stage, with the advantage that we avoid the unpleasant effect of mercury. It is especially valuable in combating emergencies such as choked disk, in malignant syphilis or the hereditary type or in those cases resistant to mercury. Objections are the pain which immediately follows the injection and the possible injury to the sight. Intravenous injection obviates the first objection and will undoubtedly be the method of administration of the future. As to the impression that it is desirable to avoid mercury for a period before and after the giving of salvarsan, this is without foundation and, in fact, many patients do better when the two are given together. This supports Ehrlich's theory that the organism may have more than one chemoreceptor and can be attacked from more than one side. In cases in which a second dose of salvarsan does not seem advisable a course of mercury is then recommended. [E. H. R.]

### Journal of Experimental Medicine.

#### Sept. 1, 1910.

1. Bond, G. S. *Effect of Various Agents on the Blood Flow through the Coronary Arteries and Veins.*

2. HIRSCHFELDER, A. D. *Another Point in Resemblance between Anaphylactic Intoxication and Poisoning with Witte's Peptone.*
3. LEVIN, I. *Studies on Immunity in Cancers of the White Rat.*
4. WELLS, H. G. *The Relation of Fatty Degeneration to the Oxidation of Purines by Liver Cells.*
5. *NICHOLS, H. J. *Experimental Yaws in the Monkey and Rabbit.*
6. BROWN, W. H. *Changes in the Hemosiderin Content of the Rabbit's Liver during Autolysis.*
7. AUER, J. *The Effect of Vagus Section upon Anaphylaxis in Guinea Pigs.*
8. *DUVAL, C. W. *The Cultivation of the Leprosy Bacillus and the Experimental Production of Leprosy in the Japanese Dancing Mouse.*
9. DOCHEZ, A. R. *Intracellular Proteolytic Enzymes of Liver.*
10. SACHS, B., AND STRAUSS, I. *The Cell Changes in Amaurotic Family Idiocy.*
11. ROUS, P. *A Transmission of Avian Neoplasm (Sarcoma of the Common Fowl).*

5. Nichols was able to transfer the spirochetæ of yaws from man to the monkey and from the monkey through three generations in the rabbit. Wilson found only very trifling differences in the study of the morphology of the organisms in syphilis and yaws. He considers that the differences in the lesion of syphilis and yaws in the monkey is the surest way to differentiate the organisms. The lesions of syphilis and yaws in the rabbit differ only in degree. The complement-fixation reaction occurred in the rabbits infected with the spirochetæ of yaws as well as those infected with the spirochetæ of syphilis.

8. Duval was able to grow the bacillus of leprosy in pure culture and to reproduce the disease in the Japanese dancing mouse. He used a special medium of agar or banana, prepared with a 1% solution of cystein and tryptophane; after an incubation of from one to two months small white colonies appear if the cultures are kept in a moist temperature, ranging between 32 and 35° C. The cultures are not sealed as oxygen is constantly required in addition to moisture. Light also seemed to favor the growth of the bacillus of leprosy. [R. I. L.]

JOURNAL OF INFECTIOUS DISEASES.

JANUARY, 1911.

1. *ANDERSON, J. F., AND MCCLINTIC, J. B. *A Method for the Bacteriological Standardization of Disinfectants.*
2. PHELPS, E. B. *The Application of Certain Laws of Physical Chemistry in the Standardization of Disinfectants.*
3. GURD, F. B. *Upon the Presence of Suppuration in the Tubercles of Leprosy.*
4. MCCOY, G. W. *The Susceptibility to Plague of the Weasel, the Chipmunk and the Pocket Gopher.*
5. HARRIS, D. L., AND SHACKELL, L. F. *The Effect of Vacuum Desiccation on the Virus of Rabies, with Remarks on a New Method.*
6. MILLER, E. C. L. *On the Administration of Diphtheria Toxin in a Collodion Sac.*
7. WELLS, H. G., AND OSBORNE, T. B. *The Biological Reactions of the Vegetable Proteins.* 1. *Anaphylaxis.*

1. In their effort to find a correct method of standardizing disinfectants, Anderson and McClintic are doing the public a service. According to their paper, there has been no such method proposed; they criticise the Rideal-Walker and Lancet methods, and offer a substitute which, although based upon the same principle of comparison with phenol, does away with several sources of error. The "phenol co-efficient" of the disinfectant in question is determined by comparing its bactericidal power in certain dilutions with the bactericidal power of phenol in the same dilutions. The bacteria used, the time of exposure and the temperature of the media must, of course, be similar with both substances tested. [G. G. S.]

SURGERY, GYNECOLOGY AND OBSTETRICS.

JANUARY, 1911.

1. BECK, E. G. *The Stereoscopic Radiograph as an Aid to the Surgeon.*
2. PETERSON, R. *Cancer of the Uterus and Its Cure by the Radical Abdominal Operation.*
3. WILLSON, P. *Kidney Displacements and Dystocia. Kidney Displacements, Congenital and Acquired, as Etiological Factors in Dystocia.*
4. ROBERTS, J. B. *The Operative Cure of Cicatricial and Congenital Deformities of the Face.*
5. KELLY, H. A. *The Best Method of Exposing the Interior of the Bladder in Suprapubic Operations.*
6. *MARTIN, F. H. *The Significance of the Lane Kink of the Ileum.*
7. *LESPINASSE, V. D., AND FISHER, G. C. *Hemorrhage of the Newborn: Treatment by Direct Transfusion of Blood. Review of the Literature.*
8. LESPINASSE, V. D., FISHER, G. C., AND WOLFER, J. A. *Some Experiments on the Renal Artery.*
9. PORTER, J. L. *Four Essentials in the Treatment of Painful Feet.*
10. HALPENNY, J. *Acute Free Suppurative Peritonitis.*
11. GORDMAN, C., AND KRISTELLER, L. *The Value of Phenolsulphonethalein in Estimating the Functional Efficiency of the Kidneys.*
12. ANDREWS, E. W. *Pneumatic Rupture of the Intestine. A New Type of Industrial Accident.*
13. SCUDDER, C. L. *A Malignant Lymphoma of the Small Intestine: Partial Intestinal Obstruction.*
14. BALCH, R. E. *The Roux Operation in Dilatation of the Stomach.*

6. Martin points out that the Lane kink of the ileum has its location in the last six inches of the ileum before its attachment to the cecum. It occurs at this point because of the comparatively fixed condition of this part of the gut, due to its short mesentery. The actual cause of the bend in the intestine and the adhesions complicating it and the change in its mesentery are due to traumatism as a result of the prolapsed cecum dragging upon it, or the pulling of the rest of the intestines upon it. Thus a bending of the ileum in one or more places, obstructing its lumen, is produced. The symptoms are acute colicky pains or a dull, steady pain due to chronic stasis subject to exaggeration when the intestines are overloaded. The location of the pain is generally one inch below and to the right of the umbilicus. There are occasional attacks of acute or subacute obstruction, relieved by recumbent position and dieting, anorexia, indigestion, with gas formation and general toxemia due to intestinal stasis. The treatment is laparotomy, separation of adhesions, straightening the intestine, replacement of organs with interposition of a pad of omentum as a bolster and the constant use of abdominal supporters and pads supplemented by repeated assumption of the Trendelenberg position with massage in this position.

7. Lespinasse and Fisher quote Brewer in speaking of the etiology of melena neonatorum as follows: "The latest accepted theories of melena neonatorum point not to ulceration or to gross lesions, but to the capillary blood vessels as the source of the bleeding, and the clinical picture of these cases is undoubtedly very like that of an infection as the etiological factor. But the course and the remarkable cure of the case reported here would seem to disprove both the infectious theory of its origin and the blood vessel explanation of the diapedesis of red cells and undisturbed osmosis resulting in the capillary hemorrhage. At the time of the operation the baby was in a dying state; immediately after, the baby was in perfect health. There was no period of convalescence. Such a sudden change in condition could not be due to a structural generation in the capillary vessels nor to a sudden overcoming of an infection. The only possible explanation of so rapid a change must be found in a chemical condition of the blood. And the final conclusion as to the nature of the disease is a congenital malformation of the blood of unknown chemical nature. The solution of the problem of its etiology is to be found in a chemical study of the process of osmosis in the capillary vessels and of the chemistry of the coagulation of the blood."

The authors consider the father the best donor. In six cases transfused an immediate cessation of hemorrhage has been effected in all and immediate noticeable increase in bodily vigor. They claim direct transfusion of blood as the ideal treatment for melena neonatorum as it immediately overcomes hemorrhage, anemia and infection. In

the cases without syphilitic taint it is an absolute specific. It should be performed at the very onset of the symptoms. [E. H. R.]

Deutsche Medizinische Wochenschrift. No. 52. Dec. 29, 1910.

1. Riedel. *Hernia.*
2. *Hertz, R. *Granular Substances in Red Blood Corpuscles Stained by Vital Stains. Their Nature and Relation to So-Called Basophilic Granulations.*
3. Momm. *A Shot through the Liver and Aorta, with Death after Four Weeks from Sepsis.*
4. Moldovan, J. *The Effect of Intravascular Injections of Fresh Defibrinated Blood and Its Relation to the Question of Transfusion.*
5. Flatau, G. *A New Sedative and Hypnotic Called Adalin.*
6. Reiter, H. *Technic of Opsonic Determination.*
7. Herrmann, A. *Mechanical Medical Apparatus for the Practicing Physician.*
8. Schall, M. *Technical Improvements in the Field of Medicine.*

2. Herts shows that the stippling granules are decidedly different particles from those that are stained by the vital stains in the red blood corpuscles. These vital staining granules appear in large numbers in all anemic conditions. These granules are not a consistent accompaniment of lead poisoning, but point more to blood regeneration. These granules and polychromatophilia are substantially identical. [C. F., Jr.]

Berliner Klinische Wochenschrift. No. 52. Dec. 26, 1910.

1. Israel, J. *Splenomegaly, Left-Sided Hydronephrosis and Carcinoma of the Ureter.*
2. von Werdt, F. *The Question of the Relation between Status Lymphaticus, Thymolymphaticus and Addison's Disease.*
3. Rusche, W. *Collection of Illustrative Cases of Metastatic Gonorrheal Conjunctivitis.*
4. Hernfeld, I. *Concerning Vestibular Irritation and Other Symptoms of Labyrinth Disease.*
5. Schindler, C. *A Forty Per Cent Diozydiamidoarsenozol Oil.*
6. Richter, E. *The Action of Injections of Metallic Mercury.*
7. Schiele. *A New Needle-Threading Instrument.*
8. Raschkow, H. *The Treatment of Rheumatic Conditions with "Spirosal."*
9. *Runge, E. *The Treatment of Placenta Previa.*

9. Runge takes up the various operative measures now in vogue in the treatment of placenta previa, stating the advantages and disadvantages of each method. He reviews the controversy over Cæsarian section as the safest and surest treatment of placenta previa, pointing out the arguments against this measure, namely, that as this treatment must, for the most part, be reserved for hospital use solely, the student should have his attention drawn to a method which will yield good results in the hands of the general practitioner. Packing the vagina should seldom be employed and never in a hospital. The simple rupturing of the membranes yields excellent results in a large proportion of cases. But in complete placenta previa this should not be employed, as it cannot accomplish the results desired and merely increases the danger of severe hemorrhage. In complete placenta previa the Braxton-Hicks version is the operation of choice in spite of the high infant mortality. Runge urges the inflated rubber balloon inside the uterus as the most satisfactory of all methods in dealing with this complication. He describes the technic in detail. [J. L. H.]

Il Policlinico.

October, 1910.

Medical Section.

1. Ghilarducci, F. *Favorable Action of Rönigen Rays on Experimental Tuberculosis of Joints and Glands.*
2. Pezzi, C. *The Presystolic Murmur and the Duplication of the Second Sound in Mitral Stenosis.*

Surgical Section.

1. *Alessandri, R. *Tuberculosis of the Body of the Uterus, Limited to the Myometrium.*
2. Passaggi, A. *Retrograde Intestinal Strangulation.* (To be continued.)
3. *Purpura, F. *The Streptotriches and Their Action in Experimental Animals.*
4. *Gambaglio, R. *Fractures of the Carpal Scaphoid.* (Conclusion.)

1. Alessandri reports a case of apparently primary tuberculosis of the myometrium, without lesion of ovaries, tubes, serosa or endometrium. He believes the infection to have been hematogenous, from some old focus clinically unrecognizable. The patient recovered after subtotal hysterectomy. The author collects from the literature ten similar cases, in only one of which, however, was the tuberculous process limited to the uterine musculature.

3. From an elaborate laboratory study of the various streptotriches found in the mouths of animals, Purpura finds that some of these are virulent and produce forms of infectious granuloma. Others have little or no virulence and behave in the tissues merely like a foreign body. The species of streptothrix, he believes, cannot be classified by their color reaction in culture media, but may be classified by their morphologic, cultural and biologic characteristics.

4. In the conclusion of his article on fractures of the carpal scaphoid, the author presents ten cases from his own experience, with admirable x-rays and plates. [R. M. G.]

November, 1910.

Medical Section.

1. Frugoni, C. *Clinical Studies on Alterations of the Respiratory Rhythm, with Special Reference to the Anginal and Neurotic Forms.*
2. *Longo, A. *Calcium and Infantile Spasms (Apropos of Stöltzner's Theory of the Pathogenesis of Tetany in Children).*
3. Nabari, A. *Contribution to the Study of the Pathological Anatomy of Biliary Cysts of the Liver.*
4. Cardone, G. *The Mechanism of the Vasoconstrictive Action of Adrenalin.*

2. Longo reviews the literature of tetany in children and reports a few cases. Chemical researches, he says, show that in children subject to spasms the blood is deficient in calcium and the brain contains less of this element than normal. The minimum retention of calcium is found during the height of an attack, and a gradual increase in calcium content accompanies the disappearance of alarming symptoms. Electrical irritability is less in dogs fed on food rich in calcium than in those receiving food poor in calcium. Dogs given a prophylactic dose of calcium salts withstand larger doses of convulsive poisons than dogs not so protected. [L. D. C.]

Surgical Section.

1. Passaggi, A. *Retrograde Intestinal Strangulation.*
2. Solieri, S. *Hematic Cysts of the Spleen.*
3. Frascella, P. *The Bacteriologic Flora of the Normal Appendix.*

## Obituary.

### SIGMUND LUSTGARTEN, M.D.

Dr. Sigmund Lustgarten, a well-known New York dermatologist, died on Jan. 22, at the age of fifty-three years. He was a native of Vienna, and was graduated from the university of that city in 1881. He was for many years attending dermatologist to the Mount Sinai Hospital and consulting dermatologist to the Montefiore Home and Hospital for Chronic Invalids, and at a special meeting of the Board of Directors of Mount Sinai Hospital held in his memory resolu-

tions were adopted in which it was declared that "in the death of Dr. Lustgarten the hospital has lost one of the most efficient and conscientious members of its staff, the community an earnest and sincere friend of humanity, and science a pre-eminent leader, who devoted his great talent and energy not only to the alleviation of the sufferings of the afflicted, but also to the deep study of scientific improvement in his special field of labor."

## Correspondence.

### PARIS LETTER.

THE LATEST TREATMENT FOR TUBERCULOSIS. DECLINING BIRTH-RATE IN FRANCE.

[*From Our Special Correspondent.*]

PARIS, Jan. 17, 1911.

*Mr. Editor:* Our friend Doyen continues on his interesting career. Not content to rest on his laurels after announcing the cure of cancer and the disappearance of the entire class of infectious disorders, he has recently concentrated on the tuberculosis question, and various communications to the daily papers, in accordance with his usual custom, have attracted public attention, always on the watch for anything new in this line, to his efforts in that direction.

The basis of his treatment of tuberculosis is one of the tuberculins, helped out by the use of his mycolysine. He has been at this now for several months, has opened one, if not several, special clinics for the purpose, and has awakened quite a following among provincial practitioners. Only recently an entire page in small print of the *Matin* was given up to certificates from a great many quite unknown physicians as to the satisfactory results they had obtained in treating tuberculosis by this method, and in this connection an incident occurred showing what a very cool operator this surgeon is. These testimonials were his, and it is hard to believe that they were published without his knowledge, especially as this page was in reality nothing but a big advertisement for his mycolysine; yet a short time after its appearance he wrote a letter to the *Matin* saying blandly that he had been out of town, had seen their page of testimonials, and wished to congratulate them on the excellent thing they had done in helping on this good work! It is difficult to imagine a keener sense of the humorous than he must have, — or shall we perhaps better put it, a more accurate estimate of the profundity of *la bêtise humaine*.

I saw a bottle of mycolysine the other day. At the top of the label stands: "Institut du Dr. Doyen"; then a statement to the effect that the preparation cures the greater number of infectious disorders; below that, a nice picture of a microscopical preparation in which leucocytes are gorging themselves with various and sundry germs; and at the bottom the name of the chemist by whom the preparation is prepared. It would be interesting to know what would be Doyen's fate if he lived in a country where, as in England, for instance, there is a medical council that looks after the deontology of the profession!

I also tasted the stuff, — just to see, — and found it pretty unpleasant; it had quite an original flavor, which for some reason or other recalled the dissecting-room. I'm rather glad *I* do not have to take tablespoon doses several times a day! It can also be administered hypodermically. My sole experience with this method was that of a lady with whom an injection had been made in the gluteal region by an up-to-date practitioner down at the seacoast somewhere last fall; the injection had given rise to pain, a big lump and some redness, and for a while I was afraid the patient was in for a large abscess of the hip; but in the end the whole affair subsided with no worse results than the suffering and loss of time.

The occasion of my coming across the bottle of mycolysine was this: A lady here, who is studying singing under Jean de Reszke, the celebrated tenor, turned up one day at her lesson with the beginning of a cold, whereupon Jean advised her to get some mycolysine and she would be cured at once! This she did, but as the cold developed into quite a little attack of influenza, she became alarmed and sent for me. I also found it at another patient's house, the other day, under similar circumstances, influenza, but prescribed this time by a lady friend. These instances throw light on two points: The value of medical advertising in the daily press, and the boundless stupidity of women in everything medical; this latter is something I never can grow reconciled to, in spite of gray hairs and a quarter of a century's medical experience. And it seems to me as though the better the class of woman and the more wide-awake her mind, the bigger fool she is in medicine.

But I am afraid that since on several occasions I have had to cite the *Matin* in connection with Doyen and his doings, some of your readers may think that this paper occupies itself almost exclusively with this subject! Such is far from being the case. The *Matin* is a wide-awake and well-informed daily, and, considering its small size and generally poor appearance in comparison with the papers English-speaking people are used to, manages to cover a pretty wide field.

It came out, for instance, recently with a leading article by Lacassagne, a Lyons professor, concerning race suicide in France that must have been a disagreeable surprise to many a Frenchman. It has, of course, long been common talk that the population of France has ceased to increase; in fact, for the past few years, the deaths have been slightly in excess of the births; as the case now stands, the German empire adds close on to one million to its population each year, whereas its next-door neighbor to the south is in round figures altogether stationary. This is certainly a very curious state of affairs, for there is no lack of prosperity in this country.

There are naturally various ways in which the natality of a country may be forced down; in France, for instance, it is said to have decreased during the last century from 32% to 20%, or more than one third. Thus, there may be disinclination to marriage on the part of the men, on account of the burdens and responsibilities it imposes. There may be deliberate prevention of conception among married couples during the childbearing age. And there may be wilful interruption of conception once established.

That all three of these causes take an important part in the present situation in France does not admit of any doubt, but what is of particular interest is the pitch to which abortion has now risen, if we are to believe Lacassagne's figures, which are, after all, only estimates on the part of himself and various colleagues interested in the same branch. For whereas that men should not want to marry, or that married couples should so arrange matters that the wife does not become pregnant, concerns no one but the immediate parties and their views on social economy, the wilful interruption of pregnancy is considered to concern society at large, and when proved brings the party up for punishment.

Now Lacassagne says, what every practitioner has had occasion to observe, that at least among the inhabitants of the large centers the induction of abortion is looked on among women as a matter of no consequence whatever; they do not even make a pretence of concealing it, or of being ashamed of it. How many women have said to me, in reply to my refusal to have anything to do with them: "Why, doctor, if I were at home my family physician would attend to it at once; he has done it —— times for me before!"

But I must admit that even though we are all more or less aware of this state of things, I, personally, was not prepared for such figures as Lacassagne cites in his article. He says that both for Paris and Lyons the yearly abortions performed *exceed the number of children born;* and that if the entire country is considered, with its 700,000 births per annum, the abortions reach fully 450,000 or 500,000. Doléris has written that in the Maternities fully one quarter of the beds are occupied by women on whom abortion has been performed, and that in a single year in Paris between four and five thousand such cases are cared for in the hospitals. Naturally it is only the bad cases, the ones that go wrong, with infection, that reach the wards; and if this figure be exact it is not difficult to

believe that, as Lacassagne says, there must be fully 70,000 abortions performed in Paris *per annum*.

In connection with the figure 700,000, the total annual baby output of France, it is interesting to note that the Germans manage to get an actual annual increase of population (deaths deducted) considerably greater than France's entire annual birth figure!

This question of natality is naturally an important one, and one on which there is much to say from various points of view. I once heard Charcot, for instance, remark to his audience, in this connection: "Who knows? It is not impossible that France's disinclination to increase her population may at some future day be laid *to her credit*. In this way, at least, we do not grow overcrowded, and are not obliged to go warring around with other races to make room for a surplus that cannot find place at home!" The theme that it is the *duty* of married people to have children for the benefit of the society to which they belong, and that in not doing so they are *defrauding* the state of a right, has always seemed to me to have one very weak point. It may be all very nice in theory that a couple should have children, be attached to them and spend endless time and money on bringing them up, — to in the end have a war brought on by some ruthless statesmen and the children disappear like so may rabbits, killed in some engagement. But all contracts have two sides, and it is the state's side that seems to me to be altogether absent in this case, or virtually so. Does the state afford any guarantee whatever that if a couple have children, bring them up in ordinary comfort, and the head of the family dies, leaving the others absolutely unprovided for, it will continue to minister to their wants on the same scale? Not at all. All it undertakes, and that very grudgingly and in the least liberal manner possible, is to see that they do not actually perish from want. The whole contract is so manifestly unfair that it is not possible not to see that there is a great deal to be said for families living on moderate salaries, with nothing whatever back of them in the way of resources, limiting their offspring to what they consider they have a fair chance of being able to bring up decently. It seems to me that such people can very well reason to themselves: "When I am convinced that the state will think of me when I am in trouble, in the same manner that it forces me by taxes and military service to think of its needs, then I will see about the large family; in the meanwhile I shall think of myself and my wife." Again, is it any service to either state or your children to procreate a large family, when you know that you have not the means either to educate them or to start them in some path in life? I cannot think so.

In this French birth-rate question I have many times been led to reflect on the illustration afforded by the house in which I live. In Paris, as you know, the immense majority of the population lives in what is known as flats; thus my house is composed of two parts, a front and a back, separated by a court, and has twenty flats, containing about as many families. I have lived in this house for the past ten years. Now how many babies do you suppose this little agglomeration has turned out during these ten years? As near as I can recollect, *three*. So you see that at least in this house we are lamentably weak as regards our duties toward the state! Where we come out strong is in the dog line. This house is a regular kennel. From the proprietor down, every family keeps a dog, when it hasn't two! I wonder the police hasn't taken the matter up. And the proprietor, who is a bit of a joker in his way, has a printed clause in all his tenants' leases to the effect that they shall not be permitted to keep noisy pets that can in any way annoy the other tenants. Now all our dogs bark at each other out of the windows more or less the livelong day, especially in good weather when everything is left open, and make at times a gruesome din. But, you see, no one can complain; the retort would be too easy! "*S.*"

## CHARLES II — A THERAPEUTIC NIHILIST.

BOSTON, Jan. 27, 1911.

*Mr. Editor:* Charles II of England was in early life a witness to the miseries of his father, Charles I, and the troubles of the period. When only twelve years of age, he viewed the battle of Edgehill from an eminence. The king's bodyguard having requested permission to charge in front of the line, the prince and his brother, the Duke of York, were left almost unattended. During the action they were entrusted to Dr. William Harvey, and the latter, having withdrawn under the cover of a hedge, is said by Aubrey to have taken a book from his pocket and, quite heedless of the din of battle and the enormous stake which was being played close by, to have speedily become completely lost in meditation. A cannon-ball, however, grazing the earth beside them, the great physician shifted his position.

It would also appear that the young prince was averse to the taking of physic, as was the practice of the time, as is evident from the two following letters. The queen's note is a curiosity, as being one of the few letters of Henrietta in the English tongue which have been handed down to us. It is written entirely in her own hand. Charles was at the time between seven and eight years of age:

"*Charles,* — I am sore that I must begin my first letter with chiding you, because I hear that you will not take physic. I hope it was only for this day, and that to-morrow you will do it, for if you will not I must come to you and make you take it, for it is for your health. I have given order to my Lord Newcastle to send me word to-night whether you will or not; therefore, I hope you will not give me the pains to go; and so I rest,

"Your affectionate mother,

"HENRIETTE MARIE R.

"To my dear Son the Prince."

It can scarcely be doubted but that Charles had his mother's note in mind when he addressed, about the same period, the following note to his governor, the Earl of Newcastle. It is written in the child's own hand, with lines ruled in pencil above and below.

"*My Lord,* — I would not have you take too much physic, for it doth always make me worse, and I think it will do the like with you. I ride every day, and am ready to follow any other directions from you. Make haste to return to him that loves you,

"CHARLES P.

"To my Lord of Newcastle."

Very truly yours,

CHARLES G. CUMSTON.

## ELEVATORS AT ELEVATED AND SUBWAY STATIONS.

*Mr. Editor:* With several elevated and subway railways in operation or in course of construction, and new ones proposed, the matter of ascent and descent at stations furnishes a problem that appeals to physicians. If the surface lines could still be used it would not so much matter, but it is already impossible to reach the business district from some quarters by surface lines, and the same may become true of other quarters. Thus people who are obliged to earn their livings are compelled to make the ascent at stations.

This is not an unimportant matter. I recall a lady who always leaves Boylston Street cars at the subway entrance and walks rather than climb the stairs at Park Street; another who on going to her brother's office in Bromfield Street always, while she could, approached it by Tremont Street and left it by Washington, in order to avoid the slight ascent in Bromfield Street; also a gentleman with an office in Pemberton Square who regularly approached it by entering the store of Houghton & Dutton, going up in the elevator and leaving by the second story into the higher level of Pemberton Square in order to avoid the ascent in the street; all these people had bad hearts. The interesting thing is that none of them had received medical advice on the subject, but had found for themselves that the ascent did them harm. Doubtless examples will occur to any practicing physician. I have notes of several children with bad hearts who seemed well enough until their classes at school were changed from a lower to an upper room, but in whom the final break quickly followed the change.

In certain cases an attempt to supply these needs has been made by the introduction of a moving staircase.

Any one in good health can use it, but just the people who need it most cannot. It is evidently impracticable for the infirm, the lame, or for women carrying babies. A real elevator is needed.

This will probably cost more money in its operation than the moving staircase. Whether this money is to be found by the railway company, and if found, whether it is to be replaced by not extending the five-cent fare further into the country, or whether a separate fare is to be charged in the elevator, and if so, what it is to be, are all practical questions that do not concern us as physicians. What does concern us is that an elevator is needed at many stations that cannot be reached by the surface. This is a matter on which we should have an opinion and be ready to express it.

Yours truly,
EDWARD M. BUCKINGHAM, M.D.

## LECTURES OF FORMER PROFESSORS OF THEORY AND PRACTICE OF PHYSIC AT HARVARD.

JAN. 25, 1911.

*Mr. Editor:* Developments in medicine are well mirrored in lectures given to medical students at varying periods. In order to preserve such documents for future medical historians, I have sought to collect volumes of students' notes on the lectures at Harvard given by the professors of theory and practice of physic. I am desirous of completing this series by obtaining notes of lectures by Drs. Benjamin Waterhouse (1782–1812), George C. Shattuck (1859–1873) and Francis Minot (1873–1890). These volumes will be presented to the Harvard Medical School and preserved in its library. If any one can supply such volumes, I shall be glad to correspond with him with a view to obtaining the volumes for this purpose by donation or purchase.

Very truly yours,
HENRY A. CHRISTIAN, M.D.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JAN. 21, 1911.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | — | — | Waltham | 7 | 1 |
| Chicago | 747 | 169 | Brookline | 6 | — |
| Philadelphia | — | — | Chicopee | 14 | 7 |
| St. Louis | — | — | Gloucester | 8 | 1 |
| Baltimore | — | — | Medford | 14 | 1 |
| Cleveland | — | — | North Adams | 7 | 3 |
| Buffalo | — | — | Northampton | 4 | — |
| Pittsburg | — | — | Beverly | 5 | — |
| Cincinnati | — | — | Revere | 4 | — |
| Milwaukee | — | — | Leominster | 4 | 1 |
| Washington | — | — | Attleboro | 6 | 1 |
| Providence | — | — | Westfield | 7 | 1 |
| Boston | 243 | 54 | Peabody | — | — |
| Worcester | 48 | 11 | Melrose | 3 | 1 |
| Fall River | 32 | 13 | Hyde Park | 3 | 1 |
| Lowell | 29 | 4 | Woburn | 3 | 0 |
| Cambridge | 30 | 4 | Newburyport | 6 | 1 |
| New Bedford | 35 | 11 | Gardner | 3 | 2 |
| Lynn | 26 | 6 | Marlboro | 3 | 0 |
| Springfield | 25 | 4 | Clinton | 5 | 1 |
| Lawrence | 23 | 8 | Milford | 1 | 0 |
| Somerville | 18 | 1 | Adams | 3 | 3 |
| Holyoke | 20 | 5 | Framingham | 2 | 0 |
| Brockton | 14 | 3 | Weymouth | — | — |
| Malden | 15 | 3 | Watertown | 3 | 1 |
| Haverhill | 11 | — | Southbridge | 4 | 3 |
| Salem | 20 | 6 | Plymouth | — | — |
| Newton | 6 | 1 | Webster | 7 | 3 |
| Fitchburg | — | — | Methuen | 4 | 1 |
| Taunton | 18 | 7 | Wakefield | 1 | — |
| Everett | 8 | 2 | Arlington | 3 | 0 |
| Quincy | 7 | 3 | Greenfield | 4 | — |
| Chelsea | 10 | 1 | Winthrop | 4 | — |
| Pittsfield | — | — | | | |

## SOCIETY NOTICES.

THE AMERICAN GASTRO-ENTEROLOGICAL ASSOCIATION. — The date of the meeting of the American Gastro-Enterological Association has been changed. The meeting will take place April 19 and 20, 1911, at Philadelphia.

CHARLES O. AARON, M.D., *Secretary.*

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY. — A meeting of the Eastern Section of the American Laryngological, Rhinological and Otological Society will be held in Boston on Saturday of this week, Feb. 4. The morning session will be at the Massachusetts General Hospital; the afternoon session at the Harvard Medical School.

## RECENT DEATHS.

DR. JOSEPH F. GRAINGER, who died of pulmonary hemorrhage last week at Cambridge, Mass., was born in Cambridge in 1882. He received the degree of M.D. from Tufts Medical School in 1906, and since that time had been practising his profession in Cambridge.

DR. FRANK GUY SHERWOOD, who died of pneumonia last week at Albion, N. Y., was born in Millville, N. Y., in 1850. After graduating from the University of Michigan, he received his medical degree from Buffalo University. He had practised medicine at Rush, N. Y., at Superior, Wis., and at Albion. He is survived by his widow, one daughter, and two sons.

DR. GEORGE F. WILBER, of Nashua, N. H., died in that city, on Jan. 21. He graduated from the Long Island Medical School in 1864.

DR. JOHN EVANS, an American dentist who had practised for many years in Paris, died there on Jan. 29.

DR. HENRY C. NEER, of Park Ridge, Bergen County, N. J., died in the Hackensack Hospital, on Jan. 27, while undergoing an operation for cancer. He was a native of Schoharie County, New York, and seventy-two years of age. He was graduated from the Berkshire Medical College in 1860, and had practised in Bergen County for forty-five years. One of his sons is Dr. Charles Neer, a physician of Baltimore.

DR. ARTHUR W. BLAIR, of Dorchester, Mass., died suddenly Jan. 18, 1911, at Duxbury, Mass., while attending to his professional duties. Dr. Blair was born at Plymouth, N. H., May 22, 1848; a graduate of Dartmouth College in 1872, receiving the degree of A.M., 1875, from Dartmouth College, and the degree of M.D. from the University of Vermont, 1881. He had been in practice in Dorchester for twenty-five years. He was a member of The Massachusetts Medical Society, New Hampshire Medical Society, American Medical Association and the Dorchester Medical Society. He was the medical director for the Commercial Travellers' Eastern Accident Association and medical examiner for other accident companies. He was a man who was highly esteemed by his associates and in the community.

## BOOKS AND PAMPHLETS RECEIVED.

Official Register of Harvard University. Vol. VIII. No. 1. 1910–11.

Nervous and Mental Disease Monograph Series No. 7. Three Contributions to the Sexual Theory. By Prof. Sigmund Freud, LL.D., Vienna. New York, 1910.

First National Conference on Industrial Diseases, Chicago, June 10, 1910. Publication No. 10. American Association for Labor Legislation. Annual Report of the Surgeon-General, U. S. Navy, 1910.

United States Naval Medical Bulletin. January, 1911.

Public Health Bulletin No. 40, Treasury Dept. Transactions of the Eighth Annual Conference of State and Territorial Health Officers with the United States Public Health and Marine-Hospital Service. Washington, 1910.

Bulletin of the Massachusetts Institute of Technology, December, 1910.

Recherches Experimentales sur les Tumeurs Malignes par Le Docteur Jean Clunet. Paris, 1910.

Syphilis and Insanity. By A. J. Rosanoff, M.D., and John I. Wiseman, M.D. Reprint.

Golden New England. By Sylvester Baxter.

Abstract of Proceedings, United States Pharmacopœal Convention, 1910.

Treasury Dept. Hygienic Laboratory Bulletin No. 72. 1. Report of an Outbreak of Typhoid Fever at Omaha, Neb., 1909–1910. 2. The Water Supply of Williamson, W. Va., and its Relation to an Epidemic of Typhoid Fever. By W. H. Frost.

Collected Studies from the Research Laboratory, Dept. of Health, City of New York, Vol. 5, 1910.

The Surgeon and His Work. By Francis Reder, M.D. Reprint.

## Original Articles.

### SPOROTRICHOSIS IN MAN AND IN THE HORSE.

BY RICHARD L. SUTTON, M.D., KANSAS CITY, MO.

DURING the past four years numerous instances of sporotrichal infection have been reported in France. The first case of the disease in man was recorded by Schenck [1] in 1898. Since that time more or less typical examples of the affection have been described by Brayton,[2] Hektoen and Perkins,[3] Burlew,[4] Trimble and Shaw,[5] Stelwagon,[6] Pusey,[7] Hyde and Davis,[8] who include Zuraski's case, and myself [9] in America; while in France, De Beurmann and Gougerot,[10] Monier-Vinard,[11] Dor,[12] Widal and Weill,[13] and a score of others have studied the disease.

The pathology of the lesions and the cultural characteristics of the organism were so thoroughly investigated by Schenck and Smith and by Hektoen that these fields were practically exhausted. De Beurmann and his colleagues deserve much credit for the care with which they have carried out their experimental studies on animals; in fact, so exhaustively has this been done that later investigators in other countries have only duplicated the work of these pioneers. Gougerout [14] insists on certain morphological and cultural differences between the fungus as encountered in France and in America, but Lutz and Splendore [15] and Page, Frothingham and Page [16] claim that a distinction does not exist and that the sporotrichal organism is one and the same in the two countries. I have studied the fungus as isolated from four cases of the disease in man, and the differences noted when various culture media are employed are to me sufficient evidence that the conclusions of Gougerout, Matruchot [17] and other French writers are not well founded and cannot be accepted. The original name (Sporotrichum schenckii) suggested for the organism by Smith should be retained, and needless confusion avoided.

At present, in the United States, we are interested in the affection more from a practical than from a theoretical viewpoint. The disease is undoubtedly a fairly prevalent one, particularly in the middle west, and in the majority of instances the true nature of the infecting agent is not recognized because the medical attendant is not familiar with its clinical manifestations. Usually an incorrect diagnosis of syphilis, tuberculosis or coccic cellulitis is made. When the characteristic symptomatology of the disorder is borne in mind, this mistake is not liable to occur. As I have pointed out in a previous communication, a traumatic lesion of the arm, forearm or leg which proves resistant to ordinary surgical treatment, and is accompanied by the development of one or more sharply circumscribed, painless, cutaneous or subcutaneous abscesses along the course of the limb, should always arouse suspicion, especially if the inflammatory manifestations typical of a streptococcic cellulitis are absent. It is extremely difficult to recover the causative agent directly from the lesions, although Page, Frothingham and Page found fragments of the organism in the broken-down tissue cells surrounding an abscess cavity. A much easier and simpler method is to aspirate a few drops of the tenacious, chocolate-colored fluid, and cultivate the fungus on artificial media. The organism is a strict aerobe, and, in consequence, fluid and débris obtained from an open lesion generally contain more and healthier fungi, but material secured from these locations is frequently contaminated with other molds and bacteria. Abundant growths can easily be secured on practically all ordinary culture media, particularly on those which are slightly acid.

Recently, a number of instances of sporotrichal infection in horses has been studied (Page, Frothingham and Page; Hyde and Davis). The first-named authors emphasize the differential points existing between this disease and epizootic lymphangitis (a disorder due to infection with the saccharomyces farcinimosis of Tokishiga [18]).

In the case reported by Hyde and Davis the affection was probably contracted from a horse which presented clinical evidence of mycotic lymphangitis.

Recently I have had under my care an instance of this disease in man in which infection very probably occurred through a similar source.

Patient, J. C., a man aged forty-four, farmer, seen in consultation with Dr. S. G. Ashley, of Earlton, Kan. The cutaneous history of the family is negative. The patient is a native of Ohio, and a resident of



FIG. 1.

Neosho County, Kansas. His general health has always been excellent.

In November, 1909, one of his horses was accidentally

cut with barbed wire on the left shoulder. The wound healed very slowly, although it did not appear to pain the animal, and there were no signs of the presence of a severe or widespread inflammatory process. About six weeks after the injury was received, several hard lumps, varying in size from a large bean to a hickory-nut, appeared beneath or in the skin on the left side of the animal's neck. These nodules were irregularly arranged and apparently painless, and remained hard and firm to the touch for about a fortnight. Then they



FIG. 2.

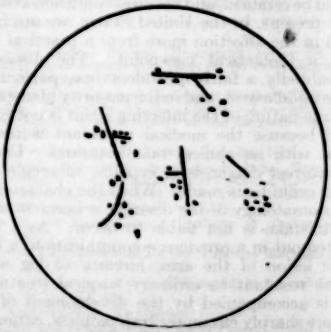
gradually became soft and compressible. At one point the overlying skin broke down, and small amounts of thick, tenacious, brownish pus exuded. The discharge continued for several weeks, although spirits of turpentine, pure carbolic acid and other antiseptics were freely employed. The other abscesses did not rupture, but finally disappeared, although the original wound on the shoulder and the ulcer on the neck were not completely healed until June, 1910. No internal treatment was used, and no bacteriologic cultures were made. None of the other animals were known to contract the disease.

*Present illness.* — In May, 1910, while repairing a manger in the barn by means of a piece of baling wire, the patient sustained a punctured wound of the right wrist. The injury was slight, and at the time but little attention was paid to it. One week later the lesion had considerably increased in size, and a firm, flat-topped, painless, reddish papule marked the site of the wound. The growth continued to increase in size until it was 4 or 5 cm. in diameter, and 1 or 2 cm. in height. The central portion of the lesion was slightly depressed, and a small amount of blood and pus could be squeezed out. The family physician was then consulted, and he advised free incision and drainage. Deep, transverse cuts were made, but very little pus escaped. The part was then cauterized with pure carbolic acid, and wet bichloride packs applied. Despite this energetic treatment, however, the lesion continued to enlarge. At this time, small, subcutaneous nodules began to appear on the flexor surface of the forearm and upper arm, and, within a period of six weeks, ten of these small, tumorlike masses were present. They varied in size from a butter bean to a large Brazil nut, and were painless and exhibited no signs of acute inflammation. There was no cording of the lymphatics, or enlargement of the epitrochlear or axillary glands, and no elevation of temperature. The nodules broke down in the course of two or three weeks, and fluctuated to the touch. Two of the abscesses were incised the latter part of July, and considerable amounts of brownish, syrupy pus removed. The wounds healed very slowly, and one of them was still present in November, over three months later. The largest abscess was located at a point 15 cm. below the axilla, and was opened and drained on Sept. 16, but did not heal.

*Physical examination.* — The patient was a large, well-built man, six feet in height, and weighed 170 lb. A careful general examination failed to reveal any abnormal condition of the internal organs. The hemaglobin percentage was 88, red cells 4,600,000, and white cells 10,800. A differential count showed the proportion to be: Large mononuclears, 10.6%; transitionals, 2.4%; small mononuclears, 19%; eosinophiles, 14%; and polymorphonuclears, 54%. The mucous membrane of the throat and pharynx was not affected. There were no cutaneous lesions of any kind other than those on the right upper limb.

On the flexor surface of the right wrist was a flat-topped, reddish nodule, 4 cm. in diameter and 1 cm. in height. The epidermis had exfoliated, leaving an irregular fringe which overlapped the base of the elevation. The central portion of the mass was scarred and ulcerated, and pus could be forced up between the points of granulation tissue, very much as in a typical blastomycetic lesion. Manipulation gave rise to no pain, and even the use of a probe caused but slight discomfort.

Between the point of the original wound and the fold of the elbow was a chain of eight lesions, six of which had healed, leaving depressed cicatrices surrounded by pigment. The two remaining foci were still open, and pus exuded when pressure was applied. Only a small scar marked the site of the first abscess that had de-

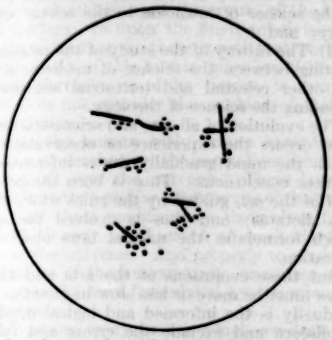


Mycelia and spores of Sporothrix schenckii from a seventy-two-hour agar culture (Spencer 1-6, Oc. 8x).

veloped on the upper arm, but about 20 cm. above it was a sinus that opened on the surface and communicated with a subcutaneous cavity 2 cm. or more in diameter. None of the lesions gave rise to either pain

or inconvenience in the use of the limb, although the one at the wrist interfered somewhat with the flexibility of that joint. There was no involvement of the glands at the elbow or at the shoulder. The temperature was normal.

*Bacteriological examination.* — A clinical diagnosis of sporotrichosis was made, and pus from all of the four open lesions used for inoculating agar tubes. Growths developed on all of the slants, but only one pure culture was secured, the uncontaminated material coming from the cavity near the axilla. The organism showed the characteristic mycelia (varying in length from 3 to 5 microns), with large numbers of oval conidia (from 1 to 2 microns in diameter).



Mycelia and spores of sporothrix schenckii from a seventy-two-hour agar culture (Spencer 1-6, Oc. 8z).

*Treatment.* — The usual line of treatment, potassium iodide in increasing dosage, which has proved so satisfactory in combatting the disease in other cases, gave excellent results in this instance. The lesion at the wrist was somewhat resistant, probably because the infection was a mixed one (sporothrix and staphylococcus pyogenes aureus), but it healed promptly under the daily application of gauze packs moistened with 1% liquor cresol compositus.

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[12] Presse Méd., 1908, xiv, p. 234.
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[17] Compt. rend. Soc. de biol., 1905, p. 379.
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## THE SPECIAL RELATION OF MODERN MEDICINE TO THE HEALTH OF WOMEN.*

BY AGNES C. VIETOR, M.D., BOSTON, MASS.

WE speak of the science and the art of medicine — *art* being defined as " practical skill guided by rules," and *science* as " that which refers to abstract principles, as distinguished from *art*." And gradually these " abstract principles " have come to take the form of a statement of the natural laws manifested in the particular field studied.

In its beginnings, the art of medicine was like all other arts in that it was based upon empiricism, that is, it was the result of what is called *experience* and the traditions of experience. But nothing is so fallacious as experience.

What we call *experience* is made up of two factors: (1) The real fact or occurrence; and (2) the impression which this fact or occurrence makes upon our minds. And these two factors make up what we call our *experience* on any given subject.

Now, experience stimulates two very important instincts: (1) We attempt to use our experience as a guide for future conduct; and (2) we desire to interchange our experiences with those of our fellow beings.

Attempting to use our experience as a rule of conduct, we do so by drawing inferences, and by deducing conclusions from these inferences.

Describing an experience, we tend to associate with it the inferences and conclusions which our particular mind drew and deduced therefrom. And exchanging this mixture of experiences, inferences and conclusions with another person, this mixture is further modified by the inferences and conclusions to which it gives rise in the mind of the other person, and which are, in turn, received by us.

An every-day example of the difficulties in drawing correct inferences and deducing accurate conclusions is the common experience of " catching cold " after wetting the feet or sitting in a draft or sleeping by an open window. In such case, the facts of the wet feet, and the draft, and the sleeping by the open window, and the subsequent " cold," are all *facts* which can be demonstrated. However, the *inference* that the " cold " is due to wetting the feet or having a draft of air blow across one or sleeping by the open window, and the *conclusion* that " colds " are due to wetting the feet or sitting in a draft of air or sleeping by an open window, are both erroneous. Physiological study shows that the condition of ill-health which is called " catching cold " may be determined by a too rapid local or general loss of heat from the body; that the rapidity of this loss of heat is increased by wetting the surface of the body, by rapid movement of the air over the surface of the body or by lowered temperature of this air, such as occurs at night; and that if the surface of the body is kept warm, wetting the feet or any other portion of the body, exposure to drafts or sleeping by an open window, or, indeed, entirely out-of-doors, have no harmful effect whatever.

The incorrect inferences and erroneous conclusions associated with this one group of experiences regarding " catching cold " are responsible for all degrees of indisposition and even serious ill-health in both men and women. But those associated with " wetting the feet " bear particularly heavily on women, since this experience is supposed to

* Address delivered before the Middlesex Women's Club of Lowell, Mass., Nov. 28, 1910.

have a particularly disastrous effect on menstruation.

To this tradition are due a host of indispositions which follow bad hygiene during the menstrual period. Not only is the daily bath omitted — for fear of "wetting the feet!" — but all forms of local and general bathing are omitted or slighted as the result of a similar process of reasoning.

Some women even refrain from washing their faces in water at such times — since they cannot wash their faces without wetting their hands, and, they reason, if it is harmful to wet the feet, may it not also be harmful to wet the hands?

Many women also interrupt their daily hygiene by staying indoors during menstruation if there is rain, or the appearance of rain, or even dampness — again for fear of this terrible experience of "wetting the feet."

And all the indispositions which follow the breaking of normal habits and the living under bad hygienic conditions (due to the influence of these and other fallacious inferences and conclusions), for about one fourth of the menstrual life, are gravely accredited to the normal function of menstruation.

Now, the brains of the men and women who have practiced the art of medicine have followed from the beginning the same laws as have the brains of their fellow men and women.

Hence, the early practice of the art of medicine was similar to the early practice of all the arts, in that it was based upon more or less personal experience, with its personal inferences and conclusions, plus a rapidly accumulating supply of the experiences, inferences and conclusions of other people. And all these experiences, inferences and conclusions have been accompanied by the fallacies inseparable from such mental processes.

Early in human history, the art of medicine became associated with the art of theology, and to a large extent these two arts were not only practiced by the same person, but were so amalgamated that the individuality of the two members of this alloy were confused, and they became for many purposes interchangeable. Thus, theological remedies were prescribed for medical ailments, and medical ailments were viewed as consequences of theological offenses.

This association of the arts of medicine and theology continues to a large extent, even to the present day.

But far back in the history of the race, the human mind began to recognize the relationship of the art of medicine not only to the art of theology, but also to all the celestial and terrestrial arts.

The history of the art of medicine may then be viewed as the history of two great movements:

(1) The history of the study of the relationship of the art of medicine to the art of theology; and

(2) The history of the study of the relationship existing between the art of medicine and all the other celestial and terrestrial arts, not excluding the art of theology.

Side by side with the growth of the *art* of medicine, as thus briefly outlined, has proceeded the growth of the *science* of medicine, *science* being defined as "that which refers to abstract principles" or to the recognition and formulation of the natural laws observed in operation.

And the same two great movements which have dominated the *art* of medicine have also dominated the *science* of medicine. Hence, similarly stated: The history of the science of medicine may be viewed as the history of two great movements —

(1) The history of the study of the relationship of the science of medicine to the science of theology; and

(2) The history of the study of the relationship existing between the science of medicine and all the other celestial and terrestrial sciences, not excluding the science of theology.

The evolution of all arts and sciences is similar. First occurs the experience or observation from which the mind gradually draws inferences and deduces conclusions. Thus is born the practical skill of the *art*, guided by the rules which repetition dictates; and thus is evolved the *science* which formulates the natural laws observed in operation.

But these evolutions of the arts and the sciences must be more or less slow in growth. Only gradually is the informed and logical mind able to discern and exclude the errors and fallacies which accompany all experiences, observations, inferences and deductions. And only by the elimination of these errors and fallacies can we hope to isolate the natural law or laws governing the particular experience or observation.

Owing to the extraordinary difficulties surrounding the subject, the *science* of theology has scarcely taken definition in the human mind, and the existence of natural laws governing it is barely beginning to be recognized. Hence, theology has remained largely an *art* — the exercise of a "practical skill guided by rules." And in so far as medicine has been, or is, associated exclusively with theology, it shares the inchoate condition of theology as a science, and remains an art, with all the tendencies to fallacy which are inherent in all arts not corrected by the sifting processes which develop the associated sciences.

On the other hand, the difficulties surrounding the more material celestial and terrestrial arts have proved less insurmountable. Hence, with the passage of the ages, these arts have attained greater perfection, and their associated sciences have more or less steadily reached clearer definition. And in so far as medicine has been associated with these other arts and sciences, it has shared their greater perfection and their increasing clarity of definition.

Indeed, one may say that the distinguishing feature of what is called "modern" medicine is the recognition of such close relation between medicine and these other arts and sciences that the study of medicine has largely become the study of these other arts and sciences manifested within the environment of the human body.

Thus, the study of medicine to-day is largely the study of physics and of chemistry as manifested in and modified by the human body; and the laws of human physiology are at one with the physical and chemical laws at work everywhere in the universe.

For example, the law of gravitation is the same whether this force be exerted upon a portion of the earth's surface; upon a celestial body wandering within the limits of this force; upon the mass of bones and soft tissues constituting the human body; upon the constituent portions of this mass — the support of the head upon the neck, of the arms and shoulders upon the trunk, of the trunk upon the legs; or upon the finest subdivisions of the tissues making up these constituent portions. And no study of this human mass, or of its constituent portions, or of its tissues, is complete which does not consider the working of this law of gravitation.

Again, the human body moves according to the laws of mechanics, the same laws which are at work all over the universe. These laws are modified by the peculiar constituents of the human body, but these modifications themselves follow laws which may be observed at work elsewhere all over the universe. And properly to study the movements of the human body, one must study and apply the laws formulated by the science of mechanics.

And, again, every breath which we draw into our lungs is initiated by the working of universal physical and chemical laws; and the action of the breathed air when it reaches the depths of the lungs is again in accordance with laws which may be demonstrated in any laboratory upon a large variety of materials. And one cannot understand the physiology of respiration without studying the laws formulated by these sciences of physics and chemistry.

So it is with every portion of the structure of the human body, and with every function of every portion of this structure. Everywhere, the action of the general laws of physics and chemistry can be demonstrated with increasing facility, and human functions can be shown proceeding as the result of the operation of these laws.

Indeed, the most profound advance in modern medicine is due to the work of a chemist, Louis Pasteur, and his studies upon the problem of fermentation.

No more striking example of the relation of medicine to the other arts and sciences can be adduced than the statement that this botanical and zoölogical work of a chemist has revolutionized the science and art of medicine.

Largely as a result of this work of Louis Pasteur, modern medicine has found itself closely allied with the arts and sciences of botany and zoölogy. Not only is there a close analogy between the life processes of the human being and those of the whole animal and vegetable kingdoms, but the study of the lower grade of plants and animals is closely related with the modern definition of many of the illnesses which have always devastated mankind.

The study of the molds, of the algæ which fill our small quiet waters, of the mosquitoes and flies which plague the world, has down the ages seemed far removed from the multitudes falling by the way along the pilgrim paths to the world's Meccas; or besieging the temples, the tents of the medicine man or woman, the hut of the witch doctor or the dusky interiors of the traffickers with the so-called supernatural.

Yet it is this study of the molds, and the algæ, and the small insects which is promising to eradicate from the world the plagues which have decimated the peoples and turned the pages of history.

Thanks to our knowledge of the associated sciences of botany and zoölogy, smallpox is entirely in our control, as are malaria and yellow fever. Tuberculosis, typhoid fever, cholera and dysentery will be in our control as soon as we exert the power which we possess to exterminate them. Diphtheria is shorn of its terrors; measles, whooping cough and scarlet fever are coming under control; and those strongholds of the occult, infantile paralysis and cerebrospinal meningitis, are already located and besieged by the allied sciences.

This brief outline of the meaning of "modern" medicine has been necessary to enable us to consider what special relation it has to the health of women.

Perhaps the most prominent characteristic of modern medicine is its attitude towards its problems. It is difficult to describe this attitude briefly, but perhaps it may be described as an attitude of open-mindedness, of desire to learn all the details of the case, of acknowledgement of inability to reach a conclusion till all circumstances have been weighed and considered, and, finally, of a willingness to admit that even after all methods of study have been exhausted, one may find it necessary to confess an inability to solve a particular problem and to admit the necessity of waiting and seeking for further data.

This, the mental attitude developed by the association of medicine with the exact sciences, contrasts strongly with the mental attitude developed by the former association of medicine with theology, and characterized by the assumption of occult powers which conferred omniscience and infallibility.

In no branch of medicine has the former medical attitude been more productive of disastrous results than in that concerning the health of women; and in no branch of medicine is the attitude of the student of the exact sciences more necessary.

Woman has been called the *weak* sex, but a timely remembrance of the weakness of man changes the adjective to the comparative, and we ascend the scale to become a *weaker* sex.

Let us not accept even this label without examination as to what we really are. The study of human history, the study of the related history of the animal series, of which we stand as the

highest evolution, both show that we are the source, the reservoir, the storehouse of the race. As are we, so is the race. And what are we?

We are the Primal Women — as strong, as vigorous, as self-sustaining, as independent — the equal of the primal man — in the sense that the lioness is the equal of the lion, the tigress of the tiger, the mare of the horse, the female eagle of the male eagle, the female fishes of the male fishes, the female of all the animal series of the corresponding males; as strong and as healthy in our individual lives as the men — and, in addition, bearing and nursing our children, carrying on the line of the race.

We are the Primitive Women — co-operating with the primitive men in forming families and communities. We are as strong and as vigorous as our men. They go forth in the early morning to hunt, to procure the flesh food and covering necessary for our common survival. We remain behind to carry on the community life; pursuing the industries we have developed; rearing our own children; helping to rear all the children; caring for the sick and the old whom we no longer abandon, but cherish.

When our men are returning from the chase, the strongest of us go to meet them and carry home upon our broad, strong backs the animals they have killed. Then, as the men repose, it is we who prepare the food; and when the food is eaten, it is we who clear away the remnants and arrange the more durable parts of the food animals for further preparation the next day — and, in addition, bearing and nursing our children, carrying on the line of the race.

We are the Women of the Older World, — Asiatic, African, European — Egyptian, Assyrian, Babylonian, Greek, Roman, Hebrew, Goth, Hun, Gaul, Angle, Saxon and Celt are we, — strong and vigorous as the men. We helped upbuild our various civilizations; we shared in all their beginnings, their attainments, their triumphs, their defeats, their wars, their plagues.

We shared with them their conquests; with them, we were conquered; but with them, we survived; we made new beginnings; founded new communities; and always and everywhere, we continued to work along the lines of our foremothers, and in extensions of these lines, as our individualities found growth and sought expression in such extensions — and, in addition, through all vicissitudes, we bore and nursed our children, carrying on the line of the race.

We are the Pioneer Women of the New World, as strong and as vigorous as our men; doing our share of the conquest of the new world; carrying on the household and neighborhood industries; keeping the family and community life coherent; caring for all the children, the sick and the old; in the absence of our men, tilling the fields and carrying the gun; and doing anything else left undone by the men — and, in addition, bearing and nursing our children, carrying on the line of the race.

We are the Women of To-day. And to-day the cry goes up that we are weak, and that the race is failing because of our weakness.

Let us examine this accusation. Biology teaches us that the two determining factors in all living matter are heredity and environment. We have just outlined our heredity. There is no weakness there. — Always there have been some weak women, but the trend of the tide is taken from its broad current, not from the back waters that slip sideways into the salt pools and marshes.

Our heritage is one of strength, of vigor, of attainment and of reproduction, of hard, strenuous, individual work; and of the incidental bearing, nursing and rearing of strong, vigorous sons and daughters, fitted to inherit the earth.

Since no fault lies in our heredity, let us examine our environment.

Again scrutinizing the pages of history for our earliest information, we see that with the giving up of the primal freedom of the individual, and the assumption of the co-operative family and community life, a great change occurred in our environment — a change from the irresponsibility of the free, unrelated life to the life where new responsibilities waited on every relation, every action and, indeed, almost every thought.

As these relations developed, the natural laws to which we referred in the beginning of this paper were called into operation, and the minds of the individuals making up the communities were impressed by their observations and experiences in this direction. Following these impressions, inferences were drawn and conclusions deduced. And these conclusions, with their inevitable errors and fallacies, led to the formulation of community rules or laws, no less binding because at first unwritten.

All down the pages of history we see these unwritten laws — founded on false as well as true impressions, choked with fallacies, incorrect inferences and erroneous deductions, fettering and crippling the bodies (as well as the minds) of both men and women.

Heavily as these false laws have borne on men, they have borne still more heavily on women, the woman being the more complex creature.

Such centuries-old false environment can be corrected only by patient inquiry, by single-minded desire for the basic facts and by constant guarding against rash inference or unjustified deduction.

This is the task of the exact sciences, and especially of modern medicine, which is now determined to make itself worthy of a place among the exact sciences, and to govern its art accordingly.

In this task, some of the facts with which we find ourselves confronted are an increasing invalidism among women; an almost matter-of-course individual expectation of menstrual stress; a frequent failure of pregnancy; a decrease in the number of children we bear; a decrease in the number of children we are able to nurse; a large number of childbirths which bear on us heavily at the time, so that we require artificial assist-

ance, and from which we emerge grievously wounded, so that we need surgical repair; a frequent subsequent sterility; a large mortality in early infancy; a frequent individual history of complications and pathological developments at the menopause, the cessation of the menstrual function.

These are grave conditions — grave for us as individuals and grave for the race of which we are the storehouse.

(The causes of the complications of the menopause still remain largely in obscurity and hence cannot profitably be dwelt on here. It is, however, of vital importance to call your attention to one well-established fact, i. e., that the great complication of this period, as well as of the entire menstrual period, is *malignant disease* (*cancer*); and that the only chance for controlling malignant disease lies in its early recognition. Hence, every departure from the normal — every smallest lump or spot in or on the breast, every irregular discharge or flow — should be viewed with suspicion until malignant disease can be excluded. And this can be done only by early medical or surgical examination.)

But there are other facts. What does it mean that being born with as sturdy and well-formed bodies as boys, by the time childhood is well advanced, 70–90% of girls have developed *curvatures of the spine*, as compared with 10–30% among boys?

What does it mean that 80–90% of girls develop *weak foot*, the first stage of *flat foot*, compared with 10–20% of boys?

What does it mean that *incompetence of the abdomen* and *dislocation of the internal organs* (splanchnoptosia) predominate in women?

What does it mean that *gall-bladder disease*, with or without stones, occurs in 75–80% of women as compared with 20–25% in men? And that in 90% of these women, its development bears a definite relation to pregnancy or childbirth?

What does it mean that *hysteria* has been so predominantly a disease of women and girls that its very name has been derived from the womb?

What does it mean that *hyperthyroidism* occurs in 80–90% of women as compared with 10–20% in men?

Studying these two groups of facts, one common characteristic pervades them — the characteristic of stress, with struggling for compensation.

Taking the second group by itself, we note that all the structural and functional weaknesses there enumerated are common to both men and women, boys and girls; but that more women and girls succumb to the stress than do men and boys.

Is the explanation of this result that women and girls are weaker than men and boys; or that men and boys have greater compensating advantages?

What are the further facts, so far as we know them? They are, briefly that the modern treatment of *curvatures of the spine;* of *abdominal incompetence;* of *dislocation of the internal organs* (splanchnoptosia); of *falling of the arch of the foot* — is directed towards the upbuilding of the muscles that support and control the various portions of the body named, and towards so changing the clothing and shoes as to permit free use of these supporting and controlling muscles.

Is, then, the greater weakness of women's backs, loins, abdominal walls and feet due to the unwritten laws which limit muscular activity for girls and women, while encouraging it for boys and men?

Is it due, also, to the hampering and deforming standards of dress and shoes prescribed by these unwritten laws for women and girls, but modified for men and boys?

As to *gall-bladder disease*, with or without gallstones, modern medicine is finding evidence that this is determined by bacterial infection. Is its more frequent occurrence in women related to the more frequent occurrence of the structural weaknesses already described — weaknesses making for diminished resistance and so making for greater ease of infection? Whatever the determining cause, gall-bladder disease is now recognized as a frequent basis for much obscure pain and so-called "indigestion" or "dyspepsia" which weaken and incapacitate many women as well as some men.

As to *hysteria*, modern medicine is demonstrating that this disease is absurdly misnamed, since its seat is in the brain, not in the uterus. Is its more frequent occurrence in women due to similar fallacies in the unwritten laws that have determined the training of the brain in women, and hampered the development of the higher controlling faculties of this organ? Whatever the reason, this weakness of the higher centers is responsible for much of the weakness and loss of efficiency in women and girls as well as in men and boys.

As to *hyperthyroidism*, this obscure form of auto-intoxication, due to over-activity of the thyroid gland, is being increasingly recognized as the cause of many symptoms of weakness, nervousness, inefficiency and sometimes death in many women as well as in some men. There is no question but that the obscure and intermittent forms of this disease are the cause of much so-called "hysteria" and "neurasthenia."

Considering now the group of menstrual and childbearing weaknesses enumerated, modern medicine has shown that *venereal infection* is the great source of childbearing disease and weakness; that it is responsible for much sterility; that it causes the largest number of the failures of pregnancy; that it causes large infant mortality, both before and after birth; that it is responsible for the majority of the serious pelvic operations which women are obliged to undergo; that one form of it produces one-child sterility; and that it is the cause of much chronic invalidism in women who survive its acute onslaught.

So it appears that regarding this question of the weakness of the Women of To-day, modern

medicine finds two great causes at work in their environment:

(1) (*a*) Structural defects in their framework; leading to weakness and inefficiency, to the development of internal weaknesses and dislocations and to a lowering of resistance to infection.

(*b*) Defects in their mental training, leading to lack of balance in mental equilibrium and control, this in turn favoring the development of physical weakness and inefficiency.

(2) Infection, especially venereal infection.

As to the remedy. A curious unity runs through the development of all these sources of weakness, inefficiency, disease and death. They can all be traced to the application of unwritten laws founded on incorrect impressions, false inferences and erroneous conclusions. The remedy is, therefore, largely a matter of education. This can be only outlined here.

Taking first the matter of venereal infection. Men must be taught the necessity of avoiding infection; women must be taught the necessity of protecting themselves from infection; boys and girls must be taught sex hygiene, to the end of eliminating the fountain-head of infection.

Taking then the matter of development of the body and the mind, we must all realize that it is wrong to educate the growing girl-child's body and mind according to some fancied "feminine" standard; that the ground plan of the body and mind of both the girl and the boy are *human* in model; that the existence of common muscles and common mental faculties, and their similar response to common stimuli and laws, are indications for common lines of exercise and cultivation; that sex characteristics are secondary and subsidiary to generic characteristics; that sex specialization normally follows upon the establishment of generic growth; and that the individual must be conserved if the race is to be preserved.

Wherever these natural laws are allowed free play and the muscles are permitted to grow and develop in their natural balance, one sees a woman strong and vigorous; with head held in poise on an erect spine; with breadth and depth of chest sufficient to hold large and vigorous heart and lungs; with strong, able arms, terminating in large, efficient hands; with broad waist and expanded lower ribs, making room for the great organs of digestion and internal chemistry; with broad, strong loins and straight, strong abdominal walls, able to support the abdominal organs and the superincumbent weight; with relatively small hips and thighs, well-modeled by muscles and unburdened by superflous fat; and with large, efficient feet, with broad forefeet, long, straight supple toes, firm arches and straight ankles, which sustain and move the whole body, keeping it always in equilibrium.*

* Contrast this figure with the degenerated, so-called "feminine" figure; with the head drooping forward or sideways on a thin, weak neck; the narrow, sloping shoulders; the narrow, flattened chest; the laterally or antero-posteriorly curved spine; the shrunken, retracted lower ribs and waist; the narrow, weak back and loins; the sagging abdomen (revealing displaced or "floating" internal organs); the inefficient thighs, large with impeding fat, but weak in muscle; the bulging inner ankles, with falling arches; the small, weak, splayed feet, with narrow stunted forefeet and distorted toes — all evidences of structural stress, with failing compensation.

Can it be doubted that if this woman escape infection, she can to-day bear and nurse her children as incidentally to a vigorous individual life as did her foremothers?

More and more, the researches of modern medicine show that this is the woman who is struggling to find expression in the Women of To-day.

[It is interesting to observe the resemblance of the synthetic woman outlined above to the Greek statue of the Venus de Milo. Since this Venus has been accepted by the instinct of the race as the ideal of beauty in Woman, and since no lasting ideal of beauty can survive unless it is founded on the truths of natural laws, it would seem that the Venus de Milo most nearly represents the ideal figure of Woman because she is the best representative of a woman in whom all the muscles have been permitted free, harmonious development, and in whom all the internal organs have remained in place.]

## OVERGROWTH OF THE EPIPHYSIS OF THE LOWER END OF THE FEMUR WITH AN OBLITERATION OF THE EPIPHYSEAL LINE.

BY JAMES WARREN SEVER, M.D.,

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EPIPHYSEAL injuries are not rare, and the literature abounds with reports of cases. However, these cases are almost invariably those in which the condition was caused by trauma, — such as fractures, — a violent muscular action causing epiphyseal separation, or due secondarily to acute inflammatory conditions such as osteomyelitis or tuberculosis. There may also be epiphyseal anomalies due to congenital defects.

I have been unable to find just such a case as I am about to report; that is, an apparently idiopathic obliteration of the epiphyseal line, accompanied by a marked overgrowth of the external condyle of the lower end of the femur in a child of eight years. MacAusland [1] reports a case in a child of thirteen years, following a crushing injury to the right knee, which presents features somewhat similar to this case, except in its causation. Coolidge,[2] Feiss [3] and O'Reilly also report cases of epiphyseal injuries which resulted in shortening and deformity. Stone [4] reports cases of deformity and lack of growth following infective processes of the epiphyses. Meisenbach [5] shows by experiment on rabbits the effects of clinical and mechanical stimulation on the epiphyseal and diaphyseal lines.

The history of the case is as follows:

B. N., colored. On Oct. 13, 1902, at the age of three months, the child was brought to the Out-Patient Department of the Children's Hospital for the correction of a right congenital talipes equinovarus. Massage and stretching was advised, which was done until Dec. 10, 1902, when no great progress having been made, tenotomies were done on the plantar fascia, tendo-Achilles and astragalo-scaphoid ligaments, and the foot put up in plaster, which extended to above the knee, which was flexed at about 60°.

On Dec. 24, 1902, the plaster was removed and re-applied, on account of a deep slough above the patella and over the lower end of the femur and extending across the leg. After this the leg and foot were kept in plaster, with frequent changes, until Jan. 6, 1904. At this time the club foot was corrected, but there was considerable atrophy of the foot and leg. No deformity at the knee was noticed at that time. On June 14, 1905, about a year and a half later, she was brought to the clinic on account of the marked outward bowing of her right leg, with an extremely relaxed condition

merly, the greater part of the shortening being in the femur. There was a bad outward bowing, with a marked relaxation of the knee-joint ligaments and a much enlarged external condyle. The tibia was rotated inward, and the patellar tendon formed a marked bow string on the inner aspect of the leg. There was about five inches' shortening of the leg as a whole. The club foot is well corrected, but the foot is shortened and flat. The leg was not very badly bowed except in weight bearing, when it seemed as if there might almost occur a lateral dislocation outward of the femur on

OVERGROWTH OF THE EPIPHYSIS — SEVER



B. 1026. Right leg before operation, April 28, 1910. Showing overgrowth of external condyle, atrophy of internal condyle, change in shape of epiphysis of tibia and absolute obliteration of epiphyseal line on femur except trace on inner side. United at eight years, that is, twelve years before it should normally. Note scar in bone where possibly the osteotome penetrated.

[illegible] of the femur, and apparently well above the epiphyseal line. The leg was corrected, and plaster was applied from toe to groin. This was worn for eight weeks. On getting about following this operation a slight outward bowing of the leg developed, and a bow-leg iron was applied, besides a lift on the shoe to equalise the length of the legs. The child was then lost sight of until Nov. 19, 1906, when she reappeared at the hospital with fully as bad a deformity as before, and slightly more shortening. The parents had left off the brace after a few weeks, and consequently the bow-legged deformity had recurred and increased. A second operation was advised, but was not accepted, and the child was not seen again until March 14, 1910.

The condition at this time was as follows (see x-ray No. 1): The leg was much more shortened than for-

in the epiphysis appearing in the following order. First, the lower end of the bone at the ninth month of fetal life (this is the only epiphysis in which ossification begins before birth, — from this the condyles and tuberosities are formed; in the head of the femur by the end of the first year after birth; in the great trochanter during the fourth year, and in the lesser trochanter between the thirteenth and fourteenth year.

The order in which the epiphyses are joined to the shaft is the reverse of that of their appearance, and their junction does not commence until after puberty, the lesser trochanter being the first joined, then the great trochanter, then the head, and lastly the inferior extremity (the first in

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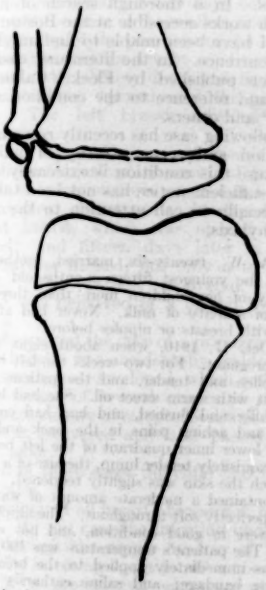
* Contrast this figure with the degenerated, so-called "feminine" figure; with the head drooping forward or sideways on a thin, weak neck; the narrow, sloping shoulders; the narrow, flattened chest; the laterally or antero-posteriorly curved spine; the shrunken, retracted lower ribs and waist; the narrow, weak back and loins; the sagging abdomen (revealing displaced or "floating" internal organs); the inefficient thighs, large with impeding fat, but weak in muscle; the bulging inner ankles, with falling arches; the small, weak, splayed feet, with narrow stunted forefeet and distorted toes — all evidences of structural stress, with failing compensation.

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Tracing showing normal epiphysis of left leg of the same child.

An osteotomy was finally done on Jan. 13, 1906, at her home by me. This osteotomy was an external one of the femur, and apparently well above the epiphyseal line. The leg was corrected, and plaster was applied from toe to groin. This was worn for eight weeks. On getting about following this operation a slight outward bowing of the leg developed, and a bow-leg iron was applied, besides a lift on the shoe to equalize the length of the legs. The child was then lost sight of until Nov. 19, 1906, when she reappeared at the hospital with fully as bad a deformity as before, and slightly more shortening. The parents had left off the brace after a few weeks, and consequently the bow-legged deformity had recurred and increased. A second operation was advised, but was not accepted, and the child was not seen again until March 14, 1910.

The condition at this time was as follows (see x-ray No. 1): The leg was much more shortened than formerly, the greater part of the shortening being in the femur. There was a bad outward bowing, with a marked relaxation of the knee-joint ligaments and a much enlarged external condyle. The tibia was rotated inward, and the patellar tendon formed a marked bow string on the inner aspect of the leg. There was about five inches' shortening of the leg as a whole. The club foot is well corrected, but the foot is shortened and flat. The leg was not very badly bowed except in weight bearing, when it seemed as if there might almost occur a lateral dislocation outward of the femur on the tibia. In flexing the leg on the thigh the tibia rotated so that it lay at right angles outward to the long axis of the femur when flexed to 90°.

A linear osteotomy on the inner side of the femur above the adductor tubercle was done on May 10, 1910, and the deformity corrected as well as possible. There was an apparent rotation of the epiphyses outward on the femur, which was also corrected and the leg put up in plaster. The patellar tendon was somewhat tight, but the dislocation of the patella inward could be reduced. The rotation of the lower leg on the femur was also corrected.

The leg was kept in plaster until June 6, 1910, when it was found that the position was not very satisfactory and that there was a tendency to a recurrence, and another operation was considered. The shortening, however, had been decreased from five to four inches. The plaster was omitted and a bow-leg iron fitted with a high sole. In August, 1910, the condition was unchanged. Flexion of the knee was only possible through a few degrees, and there was about 10° of lateral mobility.

The x-ray shows the conditions before operation. The condition to-day is unchanged, and we have a child aged eight years with a very short deformed leg, with an obliterated epiphyseal line and a much overgrown external condyle. The chances are very much against the leg's growing much longer as far as any increase in length in the femur can take place. The tibia may increase somewhat, but will probably lag considerably behind the one of the opposite side. There may occur a very slight growth in the internal condyle from the slight trace of the epiphyseal line which is left, but I do not believe that it will be great or will compensate the present deformity.

It will be of interest to turn for a moment to the study of the development of the femur. The femur is developed by five separate centers, one for the shaft, one for each extremity and one for each trochanter. Of all the long bones, except the clavicle, it is the first to show traces of ossification. This commences in the shaft at about the fifth week of fetal life, the centers of ossification in the epiphysis appearing in the following order. First, the lower end of the bone at the ninth month of fetal life (this is the only epiphysis in which ossification begins before birth, — from this the condyles and tuberosities are formed; in the head of the femur by the end of the first year after birth; in the great trochanter during the fourth year, and in the lesser trochanter between the thirteenth and fourteenth year.

The order in which the epiphyses are joined to the shaft is the reverse of that of their appearance, and their junction does not commence until after puberty, the lesser trochanter being the first joined, then the great trochanter, then the head, and lastly the inferior extremity (the first in

which the ossification commenced), which is not united until the twentieth year.

The epiphyseal line is on a level with the adductor tubercle, but the epiphysis does not form the whole of the cartilage-clad portion of the lower end of the bone. *The growth in the femur takes place chiefly from the lower epiphysis.*

This last fact is all-important in this case. The epiphysis having become obliterated, there can be no more growth of that bone. This brings us to the question of what to do.

There being no epiphyseal or diaphyseal line, we cannot inject substances which might stimulate their growth. Apparently about all to be done is to keep apparatus on the leg to hold it in as good a position as possible, to compensate the shortening by means of a high sole, and to make walking as easy a process as possible. There is no question but what the other leg will keep up its normal growth, and in this way the affected leg will get relatively shorter and shorter. There will be some growth in the tibia on the affected side, of course, but not as much as normal, for disuse or lack of normal use causes considerable atrophy. At present the child is severely handicapped without any great prospect of relief.

The etiology of this condition in this case is not definitely known. From a study of the x-ray and the clinical history rickets and chondro-dystrophy may be ruled out. As the first osteotomy was done about two years after the deformity was first noticed, I fail to see how it could be responsible for it. To be sure, the osteotomy may have been done near or at the epiphyseal line inadvertently, and so may have added to the original condition.

The question of pressure from the plaster cast should be considered, but even were it tight enough to produce a slough over the epiphyseal line, as it did at first, I do not believe it could exert so much pressure on the epiphysis itself as to produce such an after result. The weight and leverage of the lower leg in plaster with the knee fixed and flexed, and the epiphyseal line the fulcrum of this lever movement, may have been enough to have caused a twist and separation of the epiphysis, followed by an overgrowth. This cannot be determined, however, and I question its likelihood on account of the many possibilities it has of occurring with all the club-foot plasters, which are applied in a like manner with no bad effects. The cast, especially when worn for so long as two years, would, of course, lead to marked bone and muscle atrophy.

Any toxic condition can be dismissed from consideration on account of the single joint involved. There were no trophic or other nerve disturbances. There was no syphilitic history, nor any evidence of the disease in this case.

Eventually if the leg becomes so short as to be practically useless it can be amputated and an artificial one applied, which will be far more useful than the present one promises to be.

*N. B.* I am indebted to the X-Ray Department of the Children's Hospital for the x-ray used to illustrate this article.

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## BREAST ABSCESS DURING PREGNANCY, WITH REPORT OF A CASE.

BY JOHN T. WILLIAMS, M.D., BOSTON.

BREAST abscess during pregnancy is a condition of which little mention is made in the literature, and which is completely ignored by textbooks of obstetrics. In a thorough search of all recent American works accessible at the Boston Medical Library I have been unable to find any reference to its occurrence. In the literature, case reports have been published by Fleck,[1] Callman [2] and Davis,[3] and reference to the condition made by Billroth [4] and others.

The following case has recently come under my observation and seems worthy of publication, not because this condition is extremely rare, but because sufficient notice has not been taken of it, and especially to call attention to the necessity for prophylaxis.

Mrs. A. W., twenty-six, married, mother of five children, the youngest fifteen months old. Did not nurse any of her children more than three months because of scarcity of milk. Never had any serious trouble with breasts or nipples before.

Seen Oct. 17, 1910, when about eight (calendar) months pregnant. For two weeks the left breast had been swollen and tender, and the patient had been rubbing it with warm sweet oil. She had been alternately chilly and flushed, and had had considerable malaise, and aching pains in the back and limbs.

In the lower inner quadrant of the left breast there was an exquisitely tender lump, the size of a hen's egg, over which the skin was slightly reddened. The right breast contained a moderate amount of watery fluid, but was perfectly soft throughout. The nipples of both breasts were in good condition, and not cracked or eroded. The patient's temperature was 100, pulse 90.

Ice was immediately applied to the breast with a supporting bandage; and saline catharsis was instituted. In spite of this treatment the lump increased in size and became red and brawny. The temperature remained the same. Oct. 21, under ether, a small incision was made into the mass and two drams of pus evacuated. A gauze wick was inserted and a dry sterile dressing applied. The temperature fell at once to normal; the discharge decreased rapidly and the wick was omitted on Oct. 26.

Oct. 27 the lower hemisphere of the opposite breast became "caked" and tender, and the patient's temperature shot up to 102.5. Under ice and salts, this breast softened up rapidly; but, two days later, the left breast again became "caked," this time along the axillary border. The temperature, which the day before had dropped to normal again, rose to 102.5. Ice was again applied to the left breast, which this time subsided rapidly, and by the end of a week both were soft and non-tender throughout, and all treatment had been omitted. It is extremely problematical whether the patient will be able to nurse, and, indeed,

the wisdom of allowing her to attempt nursing is questionable.*

Billroth,[4] among 56 breast abscesses, found 4 during pregnancy; Nunn,[5] 7 among 72; Bryant,[6] 2 among 102; Velpeau,[7] 12 among 200; and Fleck,[1] 1 among 40: a total among 470 breast abscesses of 26, or 5.5%, occurring during pregnancy. In the 230 cases reported by the first three of these writers, there were 34 cases, or 14.7%, which had no connection with either pregnancy or lactation. Schroeder [8] found, among 4,000 deliveries, in v. Winckel's clinic, 6 instances of mastitis during pregnancy, and in 3,600 patients delivered at Marburg, only 5 cases.

Fleck [1] reported the case of a primigravida who developed facial erysipelas during the ninth month, but recovered. A few days before labor, both breasts became red, swollen and painful. On the first day of the puerperium she had a rise in temperature and the breast condition became aggravated. An abscess developed in the right breast, which was opened, and the patient recovered. The left breast subsided without operation.

Callman [2] reported a case of double mastitis during the sixth (calendar) month of pregnancy, the result of infection from eczema and impetigo of the nipples. Fluctuation developed first in the right breast, which was opened and pus evacuated; and fifteen days later in the left, which was also incised, but only a turbid fluid obtained. The patient recovered, went to term and was delivered of a breech by manual extraction.

Davis [3] reported the case of a primigravida, one of whose breasts was accidentally scalded by hot coffee. An abscess developed, which was incised, with the escape of several ounces of pus, from which a pure culture of streptococci was obtained. The patient recovered and later passed through a normal labor.

In each of these cases the child had to be fed by the bottle.

The etiology of all breast abscesses is, of course, infection. In my case the infection undoubtedly entered through the nipple by way of the milk ducts. The infecting agent found a good culture ground in a pre-existing engorgement of the breasts, and its growth and distribution was still further enhanced by hot applications and massage, which the patient applied vigorously before she was first seen.

In Fleck's case it seems most probable that the nipple was here also the portal of entry, although the blood stream cannot be ruled out. Callman's case is an undoubted instance of infection through the nipple, the organisms, however, probably traveling by the lymphatics rather than the ducts. In Davis's case there was no visible solution of continuity at the site of the burn, and the most satisfactory explanation is that the streptococcus was already present in the milk ducts, and attacked the tissues when their resistance became lowered by the burn.

It is unfortunate that no cultures were taken, except in Davis's case, which showed pure streptococcus. Rubeska [9] has shown that the staphylococcus aureus and albus are the most common causes of mammary abscess, the streptococcus being relatively rare. Köstlin [10] found the staphylococcus albus on the nipple in each of 100 pregnant women. In 23 of these the staphylococcus aureus, 25 the streptococcus, 14 sarcinæ, 3 staphylococcus citreus and in 2 the micrococcus tetragenus were also present. He examined the fluid from the breast in each of these cases and found it to be sterile in 14%. In the other 86% the staphylococcus albus was present, and in 2% the staphylococcus aureus as well.

That engorgement of the breasts plays a predisposing part in the etiology of abscess during pregnancy is shown by the fact that in 3 out of 4 cases there was some trouble in the opposite breast, although 2 of these quieted down without incision.

The steps in the formation of a breast abscess during pregnancy appear to be as follows: Organisms are present on the nipples and in the milk ducts of the majority of women, in greater or less number, according to the patient's habits of cleanliness and care of the nipples. These are ordinarily innocuous. When engorgement occurs, conditions favorable to their growth are developed, and when the resistance of the breast tissues is still further lowered by injury, or when organisms of unusual virulence are present, the tissues are attacked and suppuration takes place.

The prophylaxis of breast abscess during pregnancy is the same as during lactation, i. e., absolute cleanliness of the nipples, and the prompt treatment of mastitis by bandage, ice and saline catharsis.

## CONCLUSIONS.

1. Five and five-tenths per cent of all breast abscesses occur during pregnancy.

2. Organisms are present on the nipples in 100%, and in the milk ducts in 86% of all pregnant women.

3. When their growth is predisposed to by engorgement, or the resistance of the breast tissues is lowered by injury, or the organisms present are of unusual virulence, they attack the tissues and produce inflammation.

4. The prophylaxis of breast abscess during pregnancy consists in:

(1) Absolute cleanliness of the nipple.

(2) The prompt treatment of mastitis by bandage, ice and saline catharsis.


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[4] Billroth: Die Krankheiten der Weiblichen Brustdrüsen, Stuttgart, 1880, s. 14.
[5] Nunn: Quoted by Billroth, *loc. cit.*
[6] Bryant: *Ibid.*
[7] Velpeau: In Utewsky, Inaug. Dissert., Berlin, 1869.
[8] Schroeder: Köster und Schell, Marburg, 1896.
[9] Rubeska: Arch. für Gynäk., 1899, lviii, 177–184.
[10] Köstlin: *Ibid.*, 1897, liii, 201–277.


* The patient was seen by me again Dec. 17, 1910. She was delivered Dec. 1 in the Out-Patient Department of the Boston Lying-In Hospital. On the fifth day, she stated, the left breast became painful and tender, but rapidly quieted down under ice and saline catharsis, and had given no trouble since. She was nursing her baby on both breasts, although the milk supply was somewhat scanty and the child required supplementary feeding.

## Clinical Department.

# REPORT OF A CASE OF THE ADMINISTRATION OF ONE EIGHTH OF A GRAIN OF MORPHINE TO A BABY TWO AND ONE-HALF DAYS OLD. RECOVERY.

BY NATHANIEL R. MASON, M.D., BOSTON.

THE mother of the patient to be considered was twenty-eight years of age and a native of Russia. She had had four full-term children previously. This child was delivered normally at 1 P.M., Oct. 6, 1906, after a labor of four hours and forty minutes.

The baby was a male and weighed 8¾ lb. He was well developed and vigorous, crying lustily at birth.

The mother suffered from after-pains following her delivery and was given morphia for their relief. When I made my visit on the afternoon of the second day following the delivery, I left two tablets, each containing one eighth of a grain of the sulphate of morphine, to be given to the mother in the evening in case of severe after-pains. As the baby was constipated, I left also six tablets, each containing one tenth of a grain of calomel, to be given to the baby at fifteen-minute intervals.

Early in the evening the nurse retired to rest and a member of the family was left in charge of the mother and baby. The instructions were to begin the calomel at 8 P.M., but the tablets were lost. Feeling that the baby ought to have some sort of medicine, the relative gave him, at 9 P.M., Oct. 8, fifty-six hours after birth, one of the tablets of one eighth of a grain of the sulphate of morphine which had been intended for the mother. The nurse discovered the error about 10 P.M. and immediately telephoned to me. When I arrived at the house at 11 P.M. I found the baby of a somewhat dusky color, lying in a stupor, with a pulse of 128, of poor quality, and respirations of 32. It was stated that the baby had been quiet since taking the morphia and had not vomited. At 11.15 P.M., 15 minims of wine of ipecac were given by mouth. The baby swallowed it with difficulty, but emesis was not produced. The general condition of the baby failed steadily during the night. The pulse became of still poorer quality and rose in rate until it had reached 160 at 3.30 A.M. The respirations were irregular, varying between 6 and 60. The facies became more dusky, and there were periods of cyanosis of five to ten minutes in duration. The baby remained in a stupor. During the ten and one-half hours following the administration of the morphia, the following medication was carried out:

*October 8:*

| | |
|---|---|
| 11.15 P.M. | Wine of ipecac, minims xv. |
| 11.45 P.M. | Sulphate of atropine, gr. 1-350, subcutaneously. |

*October 9:*

| | |
|---|---|
| 12.10 A.M. | Sulphate of strychnine, gr. 1-240, subcutaneously. |
| 12.45 A.M. | Brandy, minims xxx. |
| 1.10 A.M. | Soap suppository. |
| 1.30 A.M. | Suds and glycerine enema. |
| 1.35 A.M. | Sulphate of atropine, gr. 1-350. |
| 2.15 A.M. | Black coffee, oz. iv, by rectum. |
| 2.45 A.M. | Brandy, minims xxx. |
| 3.25 A.M. | Brandy, minims x. |
| 4.15 A.M. | Brandy, minims iii. |
| 6.00 A.M. | Sulphate of strychnine, gr. 1-240. |
| 7.15 A.M. | Brandy, minims iii. |
| 7.30 A.M. | Castor oil, dram i. |

After 9 A.M., Oct. 9, the periods of cyanosis increased in duration and the respirations became very shallow, varying between 4 and 50 per minute, and at times stopping for periods of five to fifteen minutes. At these times artificial respiration was constantly carried out. Oxygen was begun at noon, but no benefit seemed to be derived from it. The baby could no longer swallow. During the afternoon the baby continued to fail. The pulse ranged between 150 and 160 and was barely perceptible at the wrist. The attacks of cyanosis with the accompanying cessation of respiration continued. At other times the breathing was shallow and irregular, varying between 70 and 80 per minute. There was an attack of profound cyanosis and absent respiration for one hour between 3.15 and 4.15 P.M., during which period artificial respiration and the administration of oxygen were constantly employed. A suds and glycerine enema was given at 5 P.M., but no result was obtained. After 6 P.M. a slight improvement was observed. The baby begun to open and shut his eyes. At 7.10 P.M. he gave a faint cry and several others soon followed. At 7.15 P.M., nearly twenty-four hours after the ingestion of the drug, there was a response for the first time to external stimulation, for on pinching the cheek the head was turned away. The pulse improved in quality and dropped to 136 in rate. The respirations remained rapid and irregular, varying between 36 and 72, but they became less shallow. At 10 P.M. 2 drams of castor oil were taken by mouth, the first time the baby had swallowed anything for fourteen hours. Ten minutes later strychnine sulphate, gr. 1-240, was given subcutaneously, as the baby had by this time a pulse of 160 of extremely poor quality. Five minutes afterward twitchings of the face begun and lasted for half an hour. There were several attacks of cyanosis, lasting five to ten minutes, during this second night following the ingestion of the morphia, but there was a gradual improvement in the general condition of the baby. There was a final attack of severe cyanosis between 2.35 and 2.45 A.M., and after that the condition of the baby improved steadily. At 2.45 A.M. the baby vomited half a dram of brownish fluid. This was followed by more vomiting of a similar fluid fifteen minutes later. He began to take albumen water by mouth. The color became excellent and the cry steadily stronger. Evidence of the passing of urine from a moistened diaper was observed for the first time at 5 A.M., thirty-two hours after the ingestion of the morphia. At 6.45 A.M. half a dram of breast milk from the mother was fed to the baby by a spoon and continued at frequent intervals in increasing doses during the day.

At 11 A.M. the baby had a movement of green meconium, the first passage from the bowel since taking the drug, thirty-eight hours before. At 8 P.M. the baby was started on a milk formula consisting of fat 2.00, sugar 5.00, proteid .75, which it took well at two-hourly intervals in one-half ounce doses.

From this time on recovery was uninterrupted and a few days later the baby was in excellent general condition.

I desire to express my hearty appreciation of the valuable advice of Dr. Leo V. Friedman and Dr. Howard H. Smith, who saw the baby in consultation. I also wish to acknowledge my deep obligation to Dr. Daniel F. Mahoney who on two occasions relieved me in my vigil for a period of several hours, and by his untiring efforts helped to make the recovery of the baby possible.

This unfortunate accident illustrates well the extreme caution which should be employed in leaving a drug to be taken by the mother of a newborn infant.

## KERATOSIS FOLLICULARIS.

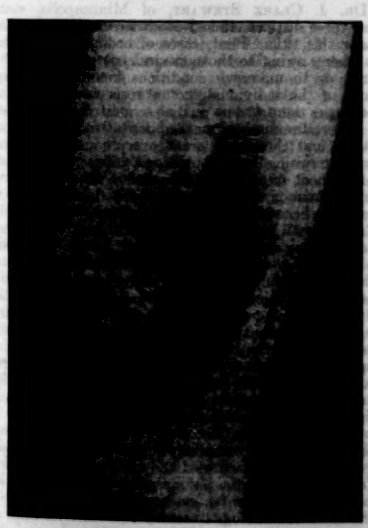
BY ARTHUR P. PERRY, M.D.,
*Assistant Dermatologist, Boston City Hospital.*

The occurrence of this disease is so unusual as to make it worth while to report when it is observed. So rare is it that Stelwagon (fifth edition) claims that only twenty-four cases have been recorded, two among the first being those of J. C. White. Bowen has also reported one. Most frequently the lesions appear on the head and face. In this instance, however, these parts have not as yet been invaded. The following is a description of my case:

Miss K., seventeen years old, a high school pupil, was sent to me by Dr. George H. Ingalls, who had treated her for some time without avail. The patient is a rather slight brunette of medium size and attractive appearance. She has never been ill with anything but the usual exanthemata of childhood. Her parents are people in good health and moderate circumstances.



Section of lesion.



Lesion in bend of elbow.

For some years past, brownish areas have appeared in various places on her body and limbs; in the bend of the right elbow, on the anterior surface of the left leg two inches below the patella, on the abdomen in the median line below the umbilicus, and recently one is beginning to show on the neck just below the edge of the collar. These areas are of varying size, up to one or two inches in diameter, of irregular outline, and present the appearance of patches of dirt on the surface of the skin, being yellowish-brown or a darker shade of the same color. On examination, these are found to be appreciably elevated above the surrounding skin. There is no discharge or odor; there are no subjective symptoms. They grow very slowly; at first there is apparent only a deeper pigmentation of the skin, but some weeks or months later the patches assume a rough nutmeg-grater appearance and feel rough and hard to the touch. A biopsy was made for the pathological department of the Boston City Hospital which returned the following report:

"Microscopic examination of sections through one of the small lesions shows moderate elongation of the papillæ of the corium, marked thickening of the horny layer, which is piled up in loose flakes on the surface; slight thickening of the prickle cell layer in places and apparently a slight pigmentation of the lower layers of the epidermis. No inflammatory infiltration of the corium, no obstruction of mouths of sebaceous glands, no dilatation of blood or lymph vessels."

The accompanying photomicrograph illustrates this condition, while the photograph shows one of the larger lesions, though not as clearly as could be desired its rough elevated character. Treatment with various local remedies was without permanent effect. Ung. acid. salicylici, Emplast. acid. salicylici, Ung. resorcin, Dil. potass. hydrat., Sapo viridis and even curettage were employed in turn, but served only to improve the

appearance of the patches temporarily. Excision was considered, but abandoned as impracticable on account of the probability of the recurrence of the disease beyond the borders of the incisions and the disfigurement of the scars. Liq. potas. arsenitis was used internally for a long period.

A course of treatment with radium in the x-ray department of the Boston City Hospital resulted in improvement of the condition of the area treated, the patch becoming thinner and assuming a more normal color. I am convinced that had this treatment been carried out with regularity for some months, definitely good results would have been attained, but the patient moved away to another city, and the case was lost sight of.

## Reports of Societies.

### WESTERN SURGICAL ASSOCIATION.

TWENTIETH ANNUAL MEETING, HELD AT CHICAGO, ILL., DEC. 19 AND 20, 1910.

THE President, DR. JOHN P. LORD, Omaha, Neb., in the chair.

#### DESMOID TUMORS OF THE ABDOMINAL WALL AFTER OPERATION.

DR. E. WYLLYS ANDREWS, Chicago, said he had seen only two cases of desmoid tumor in several thousand abdominal operations, both of which followed herniotomies. The rarity of this complication made it worth while to report these two cases. Most of those so far on record were of another type and followed pregnancy or injury of the fascia above the inguinal region. Keloid was distinct from desmoid in belonging to the skin. Although originating in scar tissue, as after burns or wounds, it always remained movable with the skin, and grew outward, not into the deep fascia. True desmoids were found not in the skin or external cicatrix, nor in the muscles, but in the fascia and aponeurosis, especially of the abdominal wall. Nearly all the reported cases had been in women after repeated childbirth. Histologically desmoid tumors were pure fibromata of the hard white form, like fibromata of the other parts, showing coarse whorls of cut fibers macroscopically like uterine myomata, and spindle cells microscopically with numerous fibrillæ between. The cells showed oval nuclei. Myomatous and even malignant degenerations might occur, as in similar growths elsewhere, but commonly they were benign. Desmoid tumors should be removed by operation inasmuch as the tendency was to grow larger and occasionally to start degenerative retrograde or malignant changes. Dr. Andrews then detailed the two cases that had come under his observation.

#### DISCUSSION.

DR. J. CLARK STEWART, of Minneapolis, said the point of greatest interest in Dr. Andrews' report was the analogy which he possibly showed between this class of tumors, desmoid tumors, as to etiology with keloid. Keloid arose largely from scar tissue. If they could show that any class of fibroid tumors also arose from the seat of traumatism, it would be an important point in their etiology and in their analogy to keloid. He doubted whether the term "desmoid" should be used. Desmoid was an old clinical term which meant just one thing to him and he thought it should be reserved for that one thing because it had no clear clinical or pathological meaning disassociated from that one clinical condition. Originally desmoids were tumors of the posterior sheath of the rectus muscle and he must differ with Dr. Andrews that these tumors were found in the majority of cases in the upper part of the abdomen. The majority of the reported tumors he had run across had been found in the lower half of the abdomen and both pathologically and clinically they had very marked characteristics. Clinically they grew inwardly, so that ultimately they became covered only by peritoneum. They attained considerable size. Quite a number of the reported cases of desmoid tumors were undoubtedly sarcomatous and it was hard to differentiate a sarcoma under the microscope from the ordinary desmoid, and the after-history of these cases had shown several times they were sarcomas, yet he did not think there was any question about the malignancy of desmoid tumors as originally described.

DR. A. E. HERTZLER, of Kansas City, Mo., stated that he thought it was easy to fix the pathogenesis of these desmoid tumors. Any tissue like the fascia of the external oblique, or any tissue which contained a large amount of the original substance, would, when irritated long enough short of suppuration, give rise to this fibrous tissue hyperplasia. One saw the same tumors subperitoneally about the abdomen. They were histologically very much the same. Histopathologically they differed from fibroma in that they were long, with large, oval, vacuolated cells, many round cells and polynuclears. This point was sufficient to separate the desmoid tumor from the fibromatous tumor or any tumor analogous to sarcoma.

DR. ANDREWS, in closing, stated that as to the identity of keloid with desmoid, that keloid, although it appeared in scar tissue, never involved anything but skin. Keloids were confined to the skin, no matter how great the size they might attain, and were movable and free.

#### NON-SUPPURATIVE OSTEOMYELITIS.

DR. J. CLARK STEWART, of Minneapolis, stated that three distinct clinical conditions might be classed under this title. First, cases of ordinary osteomyelitis where, owing to the non-virulence of the invading germ, or to unknown conditions increasing in resistance of the individual, no necrosis was caused. In such cases there was no pus, no sequestrum, but instead in a certain number marked irritative reaction was set up and there was great overproduction of bony tissue resulting in a thickened, dense and painful enlargement of the bone attacked. These cases were quite common, regularly recognised and properly treated. Second, cases of injury, generally fracture, where a small piece of bone was entirely separated and died, forming about it a closed cavity of dense new bone in which it lay until absorbed but without suppuration. These cases differed entirely from those of the first class in that the irritant which caused new production of bone was not bacterial, or at least not primarily so, but a fragment of bone which remained practically aseptic. The third class, and the one to which he especially wished to call attention, differed entirely from both of the above by having no notable beginning, but an insiduous onset although a febrile illness and a slight injury respectively antedated by two years the culmination of the disease by surgical interference. The disease was essentially chronic but progressive and regularly misdiagnosed and treated as rheumatism. He had only seen the lesions present in the tibia, but this must be accidental, as it might as well occur elsewhere. The etiology seemed absolutely wanting, as the two cases narrated had nothing in common, while the pathology and symptomatology were identi-

cal. This third class seemed to be of a different type of chronic osteomyelitis not recognized by the text-books on surgery, the nearest approach to a description of them being called "chronic osteoperiostitis," which was certainly a misnomer, for in these cases the periosteum was regularly normal. Their characteristics pathologically were the transformation of the marrow cavity into a multicellular labyrinth filled with a tissue which macroscopically resembled red marrow. There was also a synchronous subperiosteal production of bone which resulted in a fusiform enlargement, the new bone being spongy and not dense. Symptomatologically they were characterized by insidious onset, so-called rheumatic pains, worse in damp weather and at night, with slight evening rise of temperature. While the two cases cited each gave a history of an acute causative agent, in neither could this be said to stand in an undoubted etiologic position, as the local symptoms in both cases occurred over two years later. What would ultimately happen to a case of this kind without operation could only be surmised. Neither case showed any apparent change during the several months it was under observation and it seemed probable that the bone would merely remain enlarged and painful until stirred up by a fresh injury or infection, when there would be suppuration and a sinus would be formed.

The diagnosis was easy after syphilis was excluded by the non-effect of the iodides. Tubercular osteomyelitis regularly caused cold abscess and sinus formation, while periosteal sarcoma was generally more rapid and could be eliminated by the use of skiagrams. Fusiform enlargement of a long bone, increasing very slowly in size with point pressure, tenderness in various places over the enlarged bone, and slight afternoon temperature, gave a characteristic picture. The treatment was opening the bone and following the morbid process each way until normal bone was reached, cleansing, drying and filling the cavity with Moorhof's wax or union by first intention.

Dr. D. S. Fairchild, of Des Moines, Ia., stated he had seen a number of cases of this kind which seemed to have arisen from trauma or some injury which had been inflicted to the bone, with involvement of the periosteum to some extent, but the trouble seemed to extend throughout the entire shaft of the bone, the tibia being most commonly affected because it was more subject to traumatic influences. In the cases that had come under his observation the bone had been dense; that was to say, if the condition had existed for a long time, the bone became dense throughout its entire extent. In the young cases where the disease had not been progressing for a long time the bone was softer, and when the medullary canal was examined it was found almost entirely occluded by the proliferation of this bony tissue. These cases it seemed to him were more like cases of osteitis in which the inflammation had extended not only into the medullary canal and from the periosteum, but into the bone substance itself, and in the cases of long standing the bone had been very dense so that when a gutter was tunneled out, it required a considerable amount of chiseling to do so. While these cases were not very common, yet they were common enough to constitute a matter of very considerable interest to the medical profession.

Dr. W. W. Grant, of Denver, stated the diagnosis of the pathological condition under consideration was not made early, and that is why they did not see more of these non-suppurative cases of osteomyelitis. It was his opinion that if they would give them time, there would be ultimately death of the part and either pus formed or sequestrum and an involucrum. They saw these cases formerly much oftener than now, because no one thought of operation until there were several sinuses leading to the canal. That was the usual method of dealing with these cases. To-day the diagnosis could be made earlier, and if it was, operation should be done earlier when the patient would be saved several months and years of suffering, and would finally get well with a better leg and a better looking leg. It was necessary to exclude syphilis and tuberculosis especially in arriving at a proper diagnosis.

Dr. James E. Moore, of Minneapolis, stated that the principal difficulty in diagnosis was between non-suppurative osteomyelitis and chronic bone abscess. Therapeutic tests would eliminate syphilis. As a rule, syphilitic disease of the bone was bilateral, while non-suppurative osteomyelitis was usually unilateral. Chronic abscess of bone was likely to be limited to one end of the diaphysis, while the condition they were discussing affected the whole diaphysis. The history of these cases was that of a low form of inflammation, with gradual enlargement, the principal symptom being pain, more particularly at night. When they came to operate upon these cases they found the main part of the bone proper was eburnated, and the older surgeons amputated many of these limbs, showing how great the pain was at times. The modern treatment was that pointed out by the essayist.

Dr. Arthur T. Mann, Minneapolis, stated that in the last six months he had had two cases of this type of osteomyelitis in which he had used the Moorhof wax. One patient was a girl, thirteen years of age, who had symptoms for two years. She had been kept under observation as a charity patient by another physician, who spoke to Dr. Mann about her six months before he saw her. She had the usual symptoms of osteomyelitis in the lower third of the tibia, the pain being worse at night, and the temperature running up to 102 at times, but as a rule it was not as high as that. At the end of two years, when he saw her, she had a fusiform swelling at the junction of the lower third of the tibia which was very tender. She cried at night on account of the severe pain. On opening this there was a mass more dense than cancellous tissue, but much thinner than ordinary cortical bone, so that the cortex had thinned out and the medullary cavity had filled in. In the center of this there was pale granulation tissue. This condition lasted two years. This tissue was scooped out and the cavity filled with Moorhof's wax, and the usual closure of the wound made. There was healing by first intention. The pain stopped immediately following the operation. This was a case in which there had never been suppuration.

Dr. William H. Magie, of Duluth, Minn., said he would like to speak of a form of treatment which he adopted in a recent case. In this case the bone had been previously troughed by himself. Recurrence took place four or five months later, when Dr. Judd, of Rochester, Minn., operated. Later the patient returned to him with all the symptoms re-established. At the examination he found the tibia for fully eight inches enormously enlarged, so that the case really looked like one of sarcoma. He adopted the plan of not troughing the tibia, but chiseling down at the extreme end of this enlargement, splitting it, removing one half of the tibia, then he applied skin direct upon the raw surface of the bone that he had left, after removing half of the diameter of the tibia fully eight inches in length. The wound healed perfectly by first intention, and the pain was relieved immediately. The patient had been well since and was working at his occupation in the woods as a foreman of a lumber crew of loggers.

Dr. A. E. Hertzler, of Kansas City, Mo., said that in arriving at the pathogenesis of this condition he

did not think they would made a mistake if they called it a desmoid tumor of the bone. If the tumor in Dr. Andrews' case had occurred in the medullary cavity the patient would have had this trouble they were discussing. In the chronic sclerosing type of bone disease they had a milder form of infection which produced an exudate which was capable of being organized, and not as in the more acute types which form an exudate which was not all organized. These conditions could be rather clearly followed out if one took the trouble of applying tinctorial chemistry to these various tissues. Rather unconsciously, he suspected, in the use of Moorhof's bone plug they were imitating in a measure a very mild type of infection. The iodoform produced an exudate which was capable of being thrown down into a fibrillar type of fibrin, and it was by active hyperemia acting on the substance which produced an exudate, after forming this type of fibrin, that healing was brought about.

DR. M. L. HARRIS, of Chicago, stated that in the cases belonging to the subgroup which had been described by the essayist, there was no material enlargement of the bone. There was no condensation of the bony cortex. The disease usually affected the shaft of the bone. In the interior of the bone they found the red marrow which Dr. Stewart mentioned. It was very soft, almost semiliquid in some cases. These cases were characterized by extreme pain. The most interesting and typical case of that kind he saw was a man who had been treated for syphilis. He had visited several watering places in Europe, but returned to this country without being relieved. His pain was so severe that he was obliged to take morphine to afford relief. There was extreme pain in the shaft of the humerus. These cases were sensitive when the bone was percussed by hammer or when deep pressure was made. All that was necessary to do in such cases was to open the medullary cavity, remove a portion of the cortex, relieve tension, and these cases recovered.

### PRIMARY SARCOMA OF THE APPENDIX.

DR. EVERETT O. JONES, of Seattle, Wash., said that primary sarcoma of the appendix was an extremely rare condition. He detailed a case on which he had operated successfully, and then drew the following conclusions: (1) An accurate diagnosis before operation appeared to be impossible. In every case the symptoms were those of some type of appendicitis. (2) Pathologically the round-cell sarcoma predominated, next to this the spindle-cell type. (3) Inflammatory changes either chronic or acute very frequently accompanied the growth. (4) The immediate prognosis and prospect of freedom from recurrence were very good. (5) The fact that primary sarcoma of the appendix that took its origin in an inflammatory process occurred, formed a very strong additional argument for the removal of all appendices which showed evidences of inflammation.

### DISCUSSION.

DR. A. E. HERTZLER stated he had no hesitation in referring to this case as one of desmoid of the appendix, because he did not know what a desmoid was, and he did not know the nature of the appendix the essayist removed in this particular case. It was common to have microscopic pictures in these chronic gut inflammations which looked very much like sarcoma; hence the greatest care possible was necessary to make the differentiation.

DR. S. C. BEEDE, of David City, Neb., said before hearing Dr. Hertzler's remarks he was under the impression that primary sarcoma of the appendix was a surgical curiosity, but now he was not sure that it was even a curiosity. Ever since Warren reported his case in 1898 there had been considerable investigation carried on with a view to finding malignant disease of the appendix. In the department of pathology of St. Mary's Hospital, Rochester, Minn., of 5,000 appendices removed for disease, there were only 22 cases of carcinoma of the appendix, and not a single case of primary sarcoma of the appendix developed.

DR. WILLIAM C. MCCARTY, of Rochester, Minn., stated that he had had the privilege of examining about 5,000 appendices which were removed in Rochester, and since that investigation was made he had extended the list to about 10,000, and in all this series he had not seen one of sarcoma of the appendix. In the first 5,000 cases examined, as Dr. Beede had just stated, there were 22 cases of carcinoma of the appendix. Two of these he had previously diagnosed as endothelioma, which showed that the differential diagnosis between endothelioma and sarcoma was a difficult one. These were all very early cases, and in only 1 out of 17 was the serosa involved.

DR. DONALD MACRAE, of Council Bluffs, Ia., stated he had had eight or ten cases which from macroscopic appearances and the sensation imparted in his fingers appeared to be sarcoma of the appendix, yet he agreed with Dr. Hertzler. Unfortunately in the cases he had had the disease was not entirely confined to the appendix, but involved the cecum, and there were adhesions which tore away like frozen meat, and the mass had a sarcomatous feel.

DR. ARNOLD SCHWYZER, of St. Paul, Minn., stated that a few years ago, while on a visit to Switzerland, a patient presented himself with a large tumor of the diaphysis of the femur. Professor Kocher was to operate on this patient, believing the tumor was malignant. Sections were taken from it and examined by Professor Langhans. These sections had to be frozen as a quick report was necessary. Professor Langhans made the positive report that the tumor was a round-cell sarcoma. In the meantime, while waiting for the report, Kocher observed the tumor and found some grayish little dots here and there which appeared to him to be deteriorated tissue, and came to the conclusion that it was a case of infectious granuloma. He acted accordingly, left the femur, and saved the patient's leg. No recurrence took place. It was difficult to make a differentiation between infectious granuloma and sarcoma.

DR. EMERSON F. ROOT, of Salt Lake City, stated that about six or seven years ago he had a case of what he thought was primary sarcoma of the appendix. The patient had had a chronic appendicitis for more than a year. He refused operation, and at this time for a month or two he was rapidly running down, and asked to be operated on. Operation was performed. The appendix was found to be very large, five or six inches long, and an inch or more in diameter, with its lumen almost occluded. It was rather hard and very loosely attached. The cecum was not involved to any great extent. The appendix was removed together with a small portion of the head of the cecum. The wound healed by primary intention. Two or three months later the patient died. In this case the microscopic diagnosis was made of round-cell sarcoma of the appendix.

DR. WILLIAM JEPSON, of Sioux City, Ia., stated that he was adverse to coining new terms that did not express anything. The term desmoid tumor arose from the fact that prior to their histological conception of what these tumors were like, they were classed as having developed from hard band-like masses found in the rectus muscle or else in the transverse fascia. The term desmoid meant hard band, and these hard bands

were found in the abdominal wall, and it was found tumors developed from them, and consequently they were called desmoids. Was there any reason why they as surgeons should adhere to such a term when these tumors were strictly fibromas? That was all they were.

Dr. Jones, in closing, said he regretted he did not bring the sections along with him. He would say, however, that these sections were submitted to four or five pathologists in his neighborhood and all of them pronounced the disease sarcoma.

### ACUTE SUPPURATIVE APPENDICITIS.

Dr. Willard Bartlett, of St. Louis, Mo., described the operative technic in this condition at which he had arrived after years of simplification. (1) The abdomen was invariably opened through a gridiron incision immediately over the dull area if one could be made out, otherwise at McBurney's point. It was very rarely the case that this incision had to be enlarged, which could be done though with slightly greater difficulty than was the case in ordinary through and through openings. His experience had taught him that it was just as applicable to pus work as to any other. (2) Immediate search for the appendix was made, it being his practice always to remove it if it could be found without unnecessary loss of time or disturbance of many adhesions in the presence of a large amount of pus. He did not often go so far as to turn out the head of the cecum in order to find the appendix, but considered this advisable where this carried with it the adherent viscera which completely surrounded a collection of pus, to be opened outside of the abdomen at the removal of the appendix. It was rarely his custom to do much or any so-called walling off with gauze in the search for the appendix. They long ago learned that intra-abdominal tension forces liberated pus toward the opening in the wall rather than in any other direction. On the other hand, undoubted harm was done by gauze packs. At the same time, ready access to the viscera was interfered with. While in clean work he made a peritoneal autoplasty when working on the appendix or any other viscus covered by peritoneum, in these pus cases he simply tied a strand of catgut around the base of it, including the mesenteriolum, and cut it off. Not only did this save time, but the appendix and adjacent cecum were often so indurated and friable that ordinary Lembert stitches would not hold. By way of justifying a search for the appendix in the acute stage, it was hardly necessary to state that a variety of dangerous complications were avoided by its removal. In a very small per cent of these cases a fecal fistula had made its appearance, but not one had failed to close spontaneously in a few days. (3) Drainage was instituted in every case where exudate was met with. This was most readily and accurately accomplished to his thinking by tying at its middle a strip of rubber dam or a ribbon cut from an old rubber glove in the catgut ligature on the base of the appendix mentioned above. This treatment sufficed for ordinary cases, although he was not here dealing with remote pus collections, which were infrequently early in the disease and which must be considered as complications not to be dealt with in any simple routine procedure. Drainage was further aided by placing the patient in bed on the face directly after the operation. In a few days the catgut ligature was absorbed and the drainage came out of its own accord. (4) Suture of the deeper layers of the abdominal wall was never attempted unless the muscle-splitting incision had been considerably enlarged. The drain practically filled the small dead space resulting from the spontaneous closure of such incisions, thus re-establishing intra-abdominal pressure sufficiently for their purpose. In the middle of the skin wound was placed one or two clips, at each side of which one half of the rubber drain emerged, its two ends being fastened together by a clip which prevented the possibility of its being drawn into the abdomen. Thus one had practically coapted the edges of an infected wound without any danger of pus retention in the depths or under the skin. After the two drains had been removed at the end of a week, the resulting defects in the skin were closed with adhesive plaster, and in two weeks after the operation most of these patients were out of bed with a solid abdominal wall and with the skin wound completely healed or almost so.

### SURGERY OF THE MEDIASTINUM.

Dr. B. Merrill Ricketts, of Cincinnati, spoke of the progress that had been made in the surgery of this region. The neoplasms now operated on in this region included abscess, dermoids, lipoma, foreign bodies, hemorrhage, enchondroma, hydatids, etc. Strange as it might seem, the two conditions that had been operated on most frequently were abscess and dermoids. In the last ten years numerous devices had been introduced for positive and negative pressure. There had been nothing done with the Sauerbruck apparatus that could not be done without it, so that there were no special advantages attending its use. In his experience he had found that he could expose the tissues of the esophagus, a bronchus, or any portion of the lung, pericardium, or any portion of the mediastinal space without this apparatus. But surgeons now had something at their command which was of special interest and usefulness, namely, the Matas method of inflation. With this means the chest could now be opened and anything done upon the tissues within it by the method that had been suggested.

### A NEW PRINCIPLE IN THE ACTION OF ANTISEPTICS.

Dr. M. G. Seeling and Dr. C. W. Gould, of St. Louis, Mo., stated that they had developed the idea that effectiveness in the action of a germicide was predicated upon two factors: (1) The inherent power of destroying germ life, and (2) the power of penetrating tissues, blood clot or exudate, in order to reach the bacteria. The fact was emphasized that, as a rule, surgically considered, bacteria were not found free on the body surface, but in the depths, and the problem of reaching them was similar to the problem confronting naval ordnance experts, namely, the creation of sufficient driving force to enable a projector (germicide) to reach the vitals of a war ship (protoplasm of a bacterium). This power of penetration merely expressed the physical and physiological phenomena known as osmosis. They summarized the methods used in the past for testing the efficiency of germicides, and showed that they were all untrustworthy from a surgical point of view, in that the laboratory conditions were not made to conform with those of actual experience. The powers of a germicide had not been thoroughly or correctly tested unless its osmotic properties had been taken into consideration. Their method consisted in subjecting various organisms — typhoid, colon, streptococcus, staphylococcus — to the action of various germicidal solutions. The organisms were used in simple broth cultures and they were invariably separated from the germicide by either a specially constructed celloidin membrane, or by a live animal membrane skin, mesentery, omentum, diaphragm.

The results of the experiments might be summarized as follows: (1) Germicidal drugs, such as bichloride, carbolic, chrysilic acid and lysol, in watery solution of various strengths, had no apparent effect on organisms

that were separated from the germicide by a thin layer of celloidin, an excellent osmotic membrane. Iodine in watery solution was an exception. It osmosed through the celloidin and destroyed the organisms. (2) With animal membranes, excepting a 3% watery solution of carbolic acid, the same results were secured as with celloidin membranes. (3) Alcohol, above 30% strength, penetrated the celloidin membranes with a degree of rapidity and effectiveness proportionate to its percentage strength. Ninety-five per cent alcohol killed the organisms in from three to ten minutes; 80% in about an hour and a half; 70% in about seven hours, whereas 50% did not kill in twenty-four hours. Ninety-eight per cent was not perceptibly more efficacious than 95%. (4) The addition of bichloride or carbolic acid did not increase the osmotic power, or intensify the germicidal action of alcohol. (5) The addition of iodine to the alcohol made a solution of heightened osmotic power and increased the germicidal power. (6) The fatty constituents of the tissues, the skin, for example, rendered them better osmotic membranes for alcohol and tincture of iodine, for the reason that alcohol was soluble in these fats. This phenomenon underlay the fact that thorough washing of the skin interfered somewhat with the germicidal effect of the subsequent application of alcohol. The generally accepted explanation that washing the skin was a disadvantage because it softened and swelled the epidermis, was incorrect.

### DEFINITE KNOWLEDGE OBTAINED BY MEANS OF THE X-RAY.

DR. E. M. SALA, of Rock Island, Ill., reported twenty-two cases illustrating a variety of conditions in which the x-ray proved very useful and decidedly advantageous. His conclusions were: The x-ray, when in good working order, was one of the most valuable adjuncts to good surgical work they had at their command. It helped to make surgery a more exact science; it gave them a much clearer understanding of their cases and would eventually lessen to a great extent the vast number of cripples that were unavoidable previous to the time of its use.

### DISCUSSION.

DR. DANIEL N. EISENDRATH, of Chicago, showed a specimen which was obtained at autopsy of the bladder, ureter and the left kidney with dilated pelvis. In dissecting the specimen several phleboliths were found. These phleboliths lay close to the ureter, entering into the posterior wall of the bladder. He exhibited an x-ray plate showing the progress that had been made in the x-ray diagnosis of ureteral calculi. He emphasized the great value of the x-ray as an aid not only in fractures, but in many other fields of surgery.

DR. WILLARD BARTLETT, of St. Louis Mo., said in regard to wiring fractures which was touched on in the paper, given cases in which an open operation was decided upon, he wanted to speak emphatically in regard to the usefulness of the Lane plate. Since having observed Mr. Lane's work in London about six months ago, he had had occasion to screw on steel plates in from forty to fifty cases, and with the exception of fracture of the patella, of which he had had only one in this series, and with the further exception of fracture near the ends of the long bones, he believed that wire had been driven out of business by the Lane plate.

DR. A. H. LEVINGS, of Milwaukee, Wis., wished to say a few words with reference to the treatment of fractures. He had listened with a good deal of interest to what Dr. Bartlett had said about having put on Lane plates in forty or fifty cases of fractures since he had returned from London six months ago. He had had the pleasure of meeting Mr. Lane in Milwaukee a few weeks ago while on a visit to this country, and discussed with him the question of the universal use of these plates, and he would like to ask Dr. Bartlett whether he did not find it difficult to get patients who would allow him to operate on every case of fracture. He thought any man who had used the Lane plates on forty cases within six months must have operated on every case that had come under his observation. Where fixation was required to immobilize bone fragments that could not be otherwise immobilized, the Lane plates were infinitely better than wire, because most of the members who had examined skiagrams of fractures after they had been wired, especially of the femur, had found in many instances that the wires failed to hold the fragments in approximation, and in some instances the deformity and the displacements of the fragments had been greater after wiring the fragments than before. In regard to spiral fractures of the tibia, they were quite common. For some four or five years he had been treating all these fractures of the lower extremity without wiring, without any mechanical fixation whatever, and he had yet to find a fracture that could not be reduced and held in good approximation without the use of either Lane's plates or wire. With the collaboration of Dr. Mueller, of Chicago, some five years ago he devised an apparatus for the mechanical extension of the leg while a plaster cast for the purpose of immobilization was being put on the leg, and with it he had obtained excellent results.

DR. EMERSON F. ROOT, of Salt Lake City, stated that if you went before a court of justice, every juror, every person in the court room, had an idea of the x-ray picture, and he read it to suit himself and this was not at all in accordance with the idea of the man who took the picture. No man was so wise that he could offhand read every x-ray plate or very many x-ray plates without gradually educating himself to do so, and in going before a court he thought the person who had the x-ray plates to explain should insist on having his version of the matter taken by the jury and by the court.

DR. SALA, in closing, stated that he was a firm believer in the use of the Lane plates, but they would not be a good substitute for the wire in the class of cases he had mentioned.

### PRIMARY SUTURE OF SUBPARIETAL RUPTURE OF THE KIDNEY.

DR. F. GREGORY CONNELL, of Oshkosh, Wis., after reporting an interesting case of simple subparietal rupture of the left kidney in which he resorted to lumbar incision and suture of the kidney forty-two hours after the accident, with recovery, drew the following conclusions: (1) Owing to the rapid, recent increase in the number of reported cases, there was reason to believe that subparietal rupture of the kidney was more frequent than the literature would lead one to believe. (2) Shock injury to other organs and external evidence of trauma were frequently absent. (3) History of an abdominal contusion, followed by rigidity and hematuria, was sufficient to lead to exposure of the organ. (4) Slight lesions and complete rupture of the kidney could not be differentiated by clinical signs or symptoms. (5) Proof of the absence of serious rupture was called for before instituting the so-called expectant treatment. (6) Nephrectomy should be reserved for very extensive disintegration of the organ. (7) Conservative treatment, preferably by suture, was indicated in the majority of cases.

### DISCUSSION.

DR. WILLIAM J. FRICK, of Kansas City, Mo., said heavy blows or falls striking on or about the lumbar

region should always be regarded as serious. The appearance of hematuria following such injury should be sufficient evidence upon which to make a diagnosis of rupture of the kidney, although the absence of hematuria following such injuries is not always absolute proof that the kidney had not been injured. In one case of subparietal rupture of the kidney, a complicated case, hematuria was very slight, although the damage to the kidney was apparently beyond repair. The patient did not live very long. The wound about the kidney was simply packed. Injuries of the kidney were nearly always followed by hematuria, but this was not invariably the rule. In a case of gunshot wound of the kidney there was not a trace of blood in the urine to be found, macroscopically at least, although the perirenal space was filled with blood. When a diagnosis of rupture of the kidney was made, the kidney should be exposed by a lumbar incision, especially if it be an uncomplicated rupture of the kidney, as it was the only means they had of determining the extent of damage done to the kidney. They could not depend upon the amount of hematuria or any other sign. Knowing the ability of kidney tissue to repair itself, they should attempt conservative surgery in these cases. Nephrectomy should not be done unless the injury to the kidney parenchyma was so extensive as to preclude the possibility of saving enough of it to be of functional value, and unless the injury to the renal vessels was so great as to seriously interfere with the nutrition of the organ.

Dr. George N. Kreider, of Springfield, Ill., stated that if he might combine a little remark in regard to Dr. Sala's paper with this one, he would say that with the latest development of the x-ray picture, they could definitely outline the kidney, differentiating the pelvis from the substance of the kidney by the Snook type of x-ray machines. Another valuable item he saw in one case and which might be of advantage also in connection with the x-ray, and that was, to give the patient methylene blue, which would undoubtedly cause staining of the tissues about the injured kidney, and this with the radiogram might prove of great assistance in the diagnosis of these cases.

Dr. B. B. Davis, of Omaha, Neb., thought a great many nephrectomies had been done in the past unnecessarily, and they were beginning to realize the wonderful reparative power the kidney possessed. He had had one case in which he cut off the lower end of the kidney, removing about one third of the organ, and putting in a mattress suture below, with recovery of the patient. He believed that in many of these cases the suture was very much to be preferred to gauze drainage or gauze used to control hemorrhage.

Dr. F. A. Dunsmoor, of Minneapolis, stated that there was one point which might be added to those that had been brought out in connection with this paper, and that was this: It was not the mere escape of blood which produced death in these cases, but it was the mixture of urine with the blood and its absorption into the tissues which caused death, particularly in these complicated cases, in which the abdominal cavity was contaminated.

Dr. Arnold Schwyzer, of St. Paul, stated that as to the diagnosis, blood in the urine might be very scant. In one case of injury to the kidney that came under his observation, the first urine which was drawn with catheter in the hospital was not examined, and this was about two hours after the injury. The first urine they got should not only be examined by the eye, but microscopically.

Dr. A. W. Abbott, of Minneapolis, wished to speak of some experiments which were made by a Minneapolis physician (Dr. J. Frank Corbett) for the purpose of determining the ultimate results of injury to the kidney. In the first place, where the kidney had been injured and the capsule only sewed together, if there was much hemorrhage left in the kidney, it was followed by inflammatory trouble usually, and then by a scar, and a large part of the kidney was rendered useless. The same results followed packing. The best results were obtained by the through and through suture which passed through the kidney directly and about the outer limits of the pyramid. This was followed by less scarring, etc.

Dr. Daniel N. Eisendrath, of Chicago, wanted to endorse the position taken by Dr. Davis in contradistinction to that taken by Dr. Connell and Dr. Frick, and his experience was based on a personal observation of fifteen cases of subparietal rupture of the kidney. The conclusion from the study of these cases had been forced more and more upon him that the more conservative they were in the treatment of subparietal rupture of the kidney, the greater would be their percentage of recoveries, and he thought that was the tendency they saw in the foreign literature of this subject. He had seen some extremely severe cases where he thought he would do nephrectomy, but he had watched these patients bleed and bleed, and by simply leaving them alone they had recovered. Why did they recover? Granted that the kidney was extensively impaired, they knew these patients were not good subjects for operation; they were suffering from considerable shock, and the manipulation necessary to find and grasp the bleeding artery, which perhaps had already become partly or completely occluded by blood clot, and then started up hemorrhage in a fresh field, was attended with more harm than if they let these patients alone. They knew from experimental work on the kidney that if they tied off the renal vessel, and left the kidney *in situ*, that kidney underwent complete atrophy, and within a period of a few months the kidney would be a mass of cicatricial tissue. That condition undoubtedly took place in a certain proportion of cases where the kidney had been severely injured.

Dr. E. W. Andrews, Chicago, stated that he had seen a man with a ruptured kidney on whom he had operated and declined to remove the kidney, because he thought he had successfully ligated the bleeding point, three days afterwards get another severe violent hemorrhage and die within a few minutes. They could not get away altogether from the old teaching that a ruptured kidney was apt to terminate fatally conservatively treated, that was, nothing being done in the way of interference. He did not think they should stand by and let these patients with ruptured kidney have one hemorrhage after another without doing something for them; but it did not necessarily follow that nephrectomy was the only operation of choice in these cases, for sometimes, as he had done in the case of injury to the spleen or liver, they could make a closure operation. In addition to ligating the bleeding points they could close the injured kidney with rows of mattress stitches, and if such an operation was done under aseptic conditions, it might give a percentage of successful results which would compare favorably with nephrectomy as a life-saving measure.

Dr. Walter Courtney, of Brainerd, Minn., wanted to say a word about differential diagnosis between contusion of the kidney and rupture. He had seen a good many cases of injury of the kidney. If the surgeon would wait a few days, as he might in most cases, provided hemorrhage was not alarming and secondary anemia had not taken place, a large number of these cases would gradually clear up, and it would be found that the kidney had only been contused.

DR. JAMES E. MOORE, of Minneapolis, stated that it was only in exceptional cases that a nephrectomy was justified for rupture of the kidney. A patient was brought into the University Hospital recently, thirteen days after he had been thrown in a runaway accident, and presumably had sustained a ruptured kidney. He was brought to them in a moribund condition with his bladder full of clotted blood. He died. At the post-mortem examination they found that he had sustained a rupture of one of the terminal branches of the renal artery just before it entered the kidney, and the presence of blood in the urine was accounted for by the fact that through pressure the blood was transmitted along and had broken through into the pelvis of the kidney at a point below and finding its way down the ureter into the bladder.

DR. DONALD MACRAE, of Council Bluffs, Ia., said it seemed to him it was well to take a middle ground in dealing with injuries of the kidney. If they made a positive diagnosis of post-peritoneal rupture of the kidney or of contusion, the case was not fraught with as much danger as other forms of injury to this organ. But if they found a patient was going to the bad, he thought they should resort to incision, with drainage, or whatever was necessary to be done at the time. It was better, however, not to fuss with the kidney if they could help it.

*(To be continued.)*

## Book Reviews.

*Report of the Commissioner of Education for the Year ended June 30, 1910.* Volume I. Washington: Government Printing Office. 1910.

This first volume of the annual report of the United States Commissioner of Education, Mr. Elmer Ellsworth Brown, contains an immense amount of statistical material, with comment thereon, admirably classified and arranged for comparative study. The fundamental purpose of the report, as stated in the introduction, is "to set forth some of the main features of the American educational program and to point out some of the places at which there is need of improvement. There are chapters on current topics of special interest, on educational legislation, on industrial and agricultural education and on educational methods and advances in other countries. Under the section on health and hygiene it is gratifying to note that Massachusetts leads all other states of the Union in the number of its cities and towns in which physical examination of school children is provided. Massachusetts has such provision in 46 municipalities; New York stands second with 26; New Jersey third with 21; and Pennsylvania fourth with 19. The second volume of this report, which is expected to appear in about three months, will contain further statistical tables and "an account of the Alaska service of the Bureau of Education."

*The Practice of Surgery.* By JAMES GREGORY MUMFORD, M.D., Visiting Surgeon to the Massachusetts General Hospital; Instructor in Surgery in the Harvard Medical School; Fellow of American Surgical Association, etc. W. B. Saunders Company.

Dr. Mumford gives us a single volume of a thousand pages, dedicated "to my friends and associates in the Society of Clinical Surgery." The book is to be praised, and for a variety of reasons; in the first place, it is the work of one man, a young and vigorous surgeon, who for twenty years has made the most of unusual opportunities for observation, study and practice. Furthermore, it is from the pen of a writer, widely known throughout this country and England, whose style is finished, and whose forcible and at times unusual use of the English language holds the attention and fixes his statements in the memory. When one thinks of the average American textbook from the standpoint of a literary production, the relief in turning to Dr. Mumford's pages is indeed very real. Moreover, as John B. Murphy has indicated, Dr. Mumford knows what to omit; and this, added to an equally valuable knowledge of how to condense essential facts smoothly yet clearly has made possible a complete work within the limits of the present volume.

"In this book . . . I give to the reader an account of the practice of surgery — of surgery as he will see it at the bedside, in the accident ward and in the operating-room." This promise made in the preface is conscientiously executed in the text. He considers surgical diseases in their order of interest, importance and frequency, and endeavors also "to lay stress on those subjects which Nature herself has accentuated."

The book is divided into seven parts, with numerous chapters and subheadings. The main divisions are (I) The Abdomen; (II) Female Organs of Generation; (III) Genito-Urinary Organs; (IV) The Chest; (V) The Face and Neck; (VI) The Head and Spine; (VII) Minor Surgery — Diseases of Structure. All of these subjects are discussed vigorously and definitely; in many instances a single operation, the author's choice, is outlined in detail; there may be other good methods of treatment, but he describes the one which appeals most strongly to him. Therefore it follows that wherever the reader may open the book, he will find it attractive and convincing, as well as instructive, for it abounds in accurate positive statements, and is free from vague generalities and hair-splitting discussions.

The illustrations are numerous, in part original, in part adopted. The originals are distinctly good and decidedly above the average; the others are chosen with care and good judgment, and as a deserved compliment to the original artists are carefully and efficiently reproduced. The index seems sufficiently complete.

The volume may be confidently recommended, both to students and practitioners, as one from which they may learn many things pleasantly, and to which they may often return with well-founded anticipations of solace and enjoyment.

*Phases of Evolution and Heredity.* By DAVID BERRY HART, M.D., F.R.C.P.E. New York: Rebman Company. 1910.

This volume contains, first, a sketch of the work and theories of Darwin, Mendel and their successors; second, an exposition of the author's own theory of the origin and transmission of variations; third, a series of essays or studies in suggested topics, such as "Heredity in Disease," "Evolution and Controversy," "The Handicap of Sex," and "Evolution in Religion." The entire book is exceedingly well written, but the third portion is by far the most entertaining and original, as presenting the shrewd, commonsense reflections of a canny Scotch physician, who is also something of a metaphysician as well. It is particularly interesting to observe the manner in which he explains and justifies Calvinistic predestination as a spiritual counterpart of the law of heredity. The volume is well worth reading for its medical, philosophic and literary merit.

*Principles of Therapeutics.* By A. MANQUAT. Translated by M. SINBAD GABRIEL, M.D. New York and London: D. Appleton & Co. 1910.

This translation of a French work by the national correspondent to the Académie de Médecine aims to present a scientific system of rational therapeutics. Though in his preface the author claims that it is a practical, not a speculative, work, it would seem to the American mind rather theoretic. It contains, however, excellent chapters on the individualisation of therapeutics, and on the resources of non-medicinal agents, such as hygiene, hydrotherapy, climatotherapy, psychotherapy and mechanotherapy. The book should be useful to practitioners who have already mastered the elements of therapeusis, but hardly to beginners in medicine.

*Mind and Health.* The Mental Factor and Suggestion in Treatment with Special Reference to Neurasthenia and Other Common Nervous Disorders. By EDWIN ASH, M.D. Lond. 12mo. Pp. 119. New York: William Wood & Co. London: H. J. Glaisher. 1910.

"A few years ago," says the author, "the very existence of the profound influence which mind exerts over bodily processes in health and disease was absolutely denied by the majority of medical practitioners." Consequently the author devotes the first half of his book to rehearsing cases where the mind has exerted such an influence, citing all the old familiar stories that were probably aged in the days of Aesculapius, and giving various statements to show that mental factors may produce various forms of disease. His arguments would be more convincing if they were more nearly in accordance with the facts, and if he occasionally quoted from some more modern source. The book is utterly commonplace and shows no scientific knowledge.

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## SOME LEGISLATIVE MEASURES NOW PENDING IN MASSACHUSETTS.

THERE are at present pending before the Massachusetts state legislature a number of bills relating to various aspects of the public health. Some of these have already received comment in the columns of the JOURNAL. Some are unimportant, others propose legislation obviously undesirable. Three of the proposed measures seem to deserve consideration at this time.

The first is a bill accompanying a recent recommendation of the Massachusetts Commission for the Blind, and is entitled "An Act Relative to Obtaining Information Concerning the Proper Lighting of Factories and Workshops and Investigating Eye Injuries." It provides, in effect, that the state inspectors of health, while examining the lighting conditions of factories, workshops and other industrial establishments, shall make such investigation as is practicable "concerning the eye and vision in their relation to diseases of occupation, including injuries to the eyes of the employees, and to pathological conditions which are promoted by conditions under which various occupations are carried on." On the basis of such investigations, the State Board of Health is empowered to issue "printed matter containing suggestions to employers and employees for the protection of the eyes of employees," and to direct the adoption of "any mechanical device or other practicable device" by which "the danger of injury may be decreased or prevented." A fine is provided as penalty for failure to comply with any such order, and an annual appropriation is specified for the conduct of the work. The idea embodied in this act seems good, and should be carried out.

The second measure deserving consideration is a bill accompanying the recent "petition of the Massachusetts State Association of Spiritualists for legislation relative to the practice of healing by unregistered physicians." It provides for an amendment to section nine of the chapter of the Revised Laws regulating the practice of medicine in this state so that the provisions of the eight preceding sections of that chapter shall not apply "to persons who treat disease, physical ailments, defects or conditions of any person, or diagnosticate the same with a view to treat by the methods usually employed in the practice of magnetic healing, massage, hypnotism, clairvoyance, mind cure, prayer cure, Christian Science, or methods of healing, if their methods do not, except on advice and in conjunction with a registered physician, involve the practice of surgery, obstetrics or the treating of contagious diseases that are required by law to be quarantined, or the prescribing or administering of drugs, medicines, chemicals and poisons usually known as dangerous agencies, or if they do not hold themselves out as registered according to the preceding sections of this chapter." This blanket clause, though apparently innocent and well safeguarded, in reality opens the door to much freer practice on the part of the persons denominated than is allowed by the present statute. This amendment, therefore, is undesirable and should not be passed.

The third measure to which we wish to refer is a bill accompanying the petition made a year ago "for legislation to provide for the creation of a Bureau of Animal Industry." This proposed act abolishes the present cattle bureau of the State Board of Agriculture and creates a bureau of animal industry of the State Board of Health. This new bureau, to which are transferred the present functions of the cattle bureau, is to be administered by two veterinarians, as chief and assistant chief of bureau, and by such clerks, assistants and agents as the chief shall appoint under the provisions of the Civil Service Commission. Upon it will devolve the making of "orders and regulations relative to the prevention, suppression and extirpation of infectious and contagious diseases of domestic animals, and relative to the inspection, examination, quarantine, care and treatment or destruction of such animals which are affected with or have been exposed to such diseases, and relative to the burial or other disposal of their carcasses and the cleansing and disinfection of districts, buildings or places in which such contagion exists or has existed." Under its jurisdiction also will be the slaughtering and preparation of animals for food, the killing and rendering of horses and the inspection of provisions and animals. Among the diseases coming under its surveillance, according to the intent of this act, are specified "glanders, contagious pleuropneumonia, tuberculosis, Texas fever, foot-and-mouth disease, rinderpest, hog cholera, rabies, anthrax, blackleg, actinomycosis, parasitic diseases and epizootic lymphangitis." The important relation of several of these infections to man, and the close connection between animal industries and human welfare, make it desirable that their supervision and control should be correlated with public sanitation rather than with agriculture, that they should be viewed from an hygienic rather than an economic standpoint. The present bill was brought before the Legislature last year, but did not then receive the serious consideration it deserves. The purport of its provisions is good, and should be incorporated into legislation during the current session of the General Court.

## THE PREVENTION OF BLINDNESS FROM OPHTHALMIA NEONATORUM.

SINCE certain physicians have been fined for failing to report cases of ophthalmia neonatorum it is well to recall this warning: "Let physicians report, as the law requires, every case where an infant's eyes 'become swollen and red and show an unnatural discharge.' By reporting every case, regardless of diagnosis, physicians will destroy the superstition which associates ophthalmia neonatorum exclusively with gonorrhea; and by making their reports prompt as well as complete, they will make it possible for boards of health to take quick and efficient action. Only by these means can the physicians, who are responsible, remove the commonwealth's disgrace — its toleration of the blinding of the innocents."

On July 21, 1910, when our editorial columns contained this appeal, perhaps one third of the actual cases of ophthalmia neonatorum were being reported according to law. In the ensuing months, while the proportion of reported cases seems slightly to have increased, the law has still been widely disregarded. And so flagrantly unnecessary do the resulting cases of blindness appear that the State Board of Health, the Boston Board of Health and the Courts have taken action.

The need for their action may be sufficiently shown by two typical cases:

(1) A graduate of Laval, registered as a

physician in this state, attended at a birth, and according to his custom used no preventive. Symptoms of ophthalmia neonatorum were soon brought to his attention. He reported the case. So far, so good. But the local board of health left the child at home in charge of this physician, "helped" by a drunken caretaker. The board of health transferred the child to a hospital, but too late to prevent hopeless blindness.

(2) A graduate of the Harvard Medical School, who is a member of The Massachusetts Medical Society, delivered a child at a suburban hospital. Though he used a preventive at birth, symptoms of ophthalmia neonatorum appeared. After a few days' treatment, he discharged the mother and child, with a mere warning to call in some physician if the eyes did not improve. As he had not reported the case, the excellent local board could not know of the need for action. Nothing was done. And when next the physician saw his patients, the mother was wheeling this blind baby past his door.

The first case suggests the importance of leading local boards to take uniformly effective action for all reported cases; the second shows that obedience by physicians to the law is a *sine qua non* of such action being taken.

To meet the problems suggested by these and by the all too many similar cases, the State Board of Health has adopted this plan: On hearing of any case of ophthalmia neonatorum, whether through reports to boards of health or otherwise, the secretary at once notifies a state health inspector, by telegraph or telephone, to investigate the facts. To insure uniformity and thoroughness, he furnishes each inspector with a rigid *questionnaire*, which the inspector fills out and returns to the secretary. If the inspector's report indicates either neglect or illegality, the secretary notifies both the physician and the local board of health. This plan has already proved stimulating both to physicians and to boards of health.

Meantime the Boston Board of Health has stepped into the forefront of action. It had long investigated reported cases, and where necessary had removed the babies to a hospital for treatment. By persuasive methods it had secured the reporting of a fair proportion of actual cases in 1909. And yet, in spite of the four notices previously sent to all registered physicians in Boston, the board found repeated and dangerous violations of the law. This autumn, accordingly, the chairman began legal action against physicians failing to report. He wisely chose as the first case one not of gonorrheal origin, and one in which blindness had not resulted. The physician in question raised both these points in defense, and he appealed to the Suffolk Superior Court. His conviction is there on record. The Boston Board of Health has since brought into court the three other physicians against whom sufficient evidence has come to light; and out of a total of four cases has secured three convictions. A nurse and another physician have also recently been fined for failure to report cases.

It remains for the Courts to show the importance of this law. Through their clemency, only one delinquent, among three, has paid even the minimum fine. Both legal and medical opinion will support more drastic action.

## THE RESIGNATION OF DR. OWEN COPP.

In the resignation of Dr. Owen Copp as executive officer of the Massachusetts State Board of Insanity, the state loses a public servant it can ill afford to spare. He leaves Boston to accept the position of superintendent of the Pennsylvania Hospital for the Insane at Philadelphia, a private institution chartered in 1751, opened in 1752 as part of the Pennsylvania Hospital for Sick and Injured, and conducted as a separate department from 1841. That this venerable institution should find its new head in Massachusetts is not an unexpected event. The gain to Pennsylvania will undoubtedly prove a distinct loss to Massachusetts, but it is a satisfaction that Dr. Copp is leaving only after the accomplishment of a constructive work, which will greatly simplify the task of his successor. Born in 1858, educated at Dartmouth College and the Harvard Medical School, Dr. Copp began his work with the insane as second assistant physician at the Taunton Insane Hospital in 1885. He became first assistant physician at the same hospital in 1890, and in 1895 undertook the superintendency of the Massachusetts Hospital for Epileptics, a new institution. The establishment of this hospital on a basis of efficiency was due to Dr. Copp's comprehensive grasp of the difficult problem involved, and his administrative capacity. It was therefore not unnatural that he should have been appointed executive officer of the State Board of Insanity when that board needed the services of a man of tried capacity in the development of its plans for a more rational and progressive treatment of the dependents under its jurisdiction. Strongly suggested before, Dr. Copp's exceptional ability was forthwith demonstrated in the conduct of his new and responsible

position. During the period of eleven years which have intervened since his appointment, a comprehensive policy in the care of the insane has been developed, culminating in the establishment of the Psychopathic Hospital now under construction, which will place Massachusetts in the forefront of this field of public service. Dr. Copp's energy, judgment and mastery of detail have contributed largely to this result. He leaves at a time when the plans, with which he has been identified, are likely to be carried to a successful conclusion, no doubt a source of satisfaction to him, as it should be to all who are interested in the public welfare. Unfortunate as it is that this state cannot longer command his services, there is compensation in the fact that his capacity for administrative work of a constructive sort will have still further opportunity for development in the new work which he is about to undertake.

## CENTRALIZATION AND DECENTRALIZATION OF POPULATION.

THE tendency of civilization seems always to have been toward a centralization of population. As commerce, manufactures, learning and wealth develop, the country districts are drained of inhabitants to contribute to the growth of great cities. Recently published census statistics illustrate the truth of this statement in the United States. In Ohio, for example, over 51% of the people live in municipalities with a population over 5,000. During the past decade these communities have shown an aggregate increase of 33⅓% over their population in 1900. During the same period, the rural districts showed a decrease in population of about 17%. There was a net gain of inhabitants, but their distribution was widely altered. Moreover, the larger cities, those with over 25,000 inhabitants, show the greatest proportion of gain. Columbus increased 44.5% in population, Cleveland 46.9%, Hamilton 47.5%, Akron 61.6%, Canton 63.7%, and Youngstown 76.2%.

Another aspect of this centralization of population may be seen by comparing the relative density of population in different states. Published figures from the Census Bureau show the greatest density to be in Rhode Island, where there are 508.5 inhabitants to the square mile. In Massachusetts, which stands second, there are 418.8; in New Jersey, 337.7; in Connecticut, 231.3; in New York, 191.2; and in Pennsylvania, 171. This group of six northeastern states, including three of the five largest cities in the country, constitutes a center of maximum density of population in the United States. At the other end of the list are Arizona, with 1.8 inhabitants to the square mile; Wyoming, with 1.5; and Nevada, with 0.7.

A certain amount of centralization is, of course, inevitable and desirable for the highest advancement of humanity. Man is naturally gregarious, and to his association in communities is due his progress. The only question is what limit shall be put on the size of these communities. In America there seems already to be a slight spontaneous tendency to self-limitation by the growth of suburban towns; but though this ameliorates the condition of certain classes, it does not affect the worst evils of city life. Deliberate decentralization, by improvement of peripheral transit and reduction in cost of living in the country, may become the means by which these evils may be most efficiently combated in the future.

## THE OPTOMETRY BILL AGAIN.

EVERY year attempts are made before our legislature to pass laws harmful to medical standards in Massachusetts, and the present year is no exception. Although the optometry bill was overwhelmingly defeated last year, the opticians are again before the legislature with a similar bill. Their arguments are the same as before, and they are particularly active in sending to representatives and senators plausible campaign leaflets, distributed from headquarters in New York. They are also sending appeals to doctors asking them to advocate the cause. As in other years, the opticians or optometrists ask for a board of registration in what they call optometry, which shall give them a state license to fit glasses, so that in future no one but those thus licensed shall be allowed to fit lenses, except, of course, medical men. They ask protection for the public from the traveling fakir who sells glasses, and also that their optometry board shall be made up of men from their own ranks, who shall be judges of the nature of the examination and of the standard in marking.

That this system of licensing opticians under the new name of optometrists means licensing a sort of irregular medical practitioner is clearly shown by the experience of those states which have unwisely adopted this optometry legislation.

Without exception, the optometry examinations in these states contain questions on anatomy, physiology and pathology of the eye. Optometry journals are full of crude papers on medical subjects relating to the eyes, and the optometrists openly claim to be judges of the complicated reflex relations of the eye and to be able to tell the difference between the headache of refractive troubles and the headaches due to other causes, and further, to be able in all cases to do refraction without the use of a mydriatic or other drug.

The fight against the optometry bill was led successfully last year by The Massachusetts Medical Society. Medical men should be on their guard against incautiously lending their sanction in any way to this legislation.

## PROSECUTIONS UNDER THE PURE FOOD LAW IN MASSACHUSETTS.

Before the United States district court in Boston last week, a certain manufacturing company was fined $75 for violation of the pure food law in misbranding an Egyptian deodorizer, an orange extract and a vanilla extract. Under the same law, the United States Deputy Marshal seized last week in this city one hundred large cans of frozen eggs, shipped from Chicago and chiefly consigned to local bakers.

The number and extent of violations of the pure food law and drug laws in Massachusetts may be realized from the recently published report of the State Board of Health relative to its prosecutions and expenditures for inspection in the year ended Nov. 30, 1910. During this time 7,805 samples of food and drugs were examined, of which 1,527 were found not conforming to the statutes. Of these, 1,043 were samples of milk below standard, 332 were adulterated foods other than milk, and 152 were adulterated drugs. As a result of these examinations, 257 prosecutions were made, of which 244 resulted in conviction. Among the offenses for which conviction was obtained were the sale of milk not of good standard quality, of adulterated cream, of unmarked renovated butter, of oleomargarine as butter, of hamburg steak adulterated with sulphurous acid, of adulterated sausages and sausage meat, of lard and olive-oil adulterated with cottonseed oil, of maple sugar adulterated with cane sugar, of decomposed peanuts, of rolled wheat containing dead insects, of distilled and artificially colored vinegar, of diluted alcohol, and of camphor liniment, spirit of anise, tincture of ginger and tincture of iodine deficient in strength. This catalogue of offenses serves to illustrate the persistent obliquity of mankind and the necessity of such continued zeal as that of the Board of Health in the detection and prosecution of violators of law.

## MEDICAL NOTES.

New Trustees of the Carnegie Institution of Washington. — Dr. H. P. Walcott, of Boston; Dr. Simon Flexner, of New York; and Mr. Robert I. Brookings, of St. Louis, have been elected trustees of the Carnegie Institution of Washington.

Solidification of Oxygen. — Report from London states that Sir James Dewar has recently announced to the Royal Institution that he has succeeded in solidifying oxygen by means of the cold generated by its own evaporation from the liquid state. It was Professor Dewar who first succeeded in producing liquid air.

Further Seizures of Opium and Arrest of Smugglers. — It is reported from Honolulu that on Jan. 28 $10,000 worth of opium was seized aboard the Pacific liner *Hong Kong* on her arrival in that port from the Orient. A steward and three Chinese sailors were arrested.

At San Francisco, on Jan. 30, a watchman at the Pacific Mail docks was arrested on a charge of having concealed in his room thirty tins of smuggled opium. Some of the drug was found in his pockets at the time of his arrest, and he is said to have acknowledged having acted as agent for several persons concerned with the smuggling of opium into this country.

Three Centenarians. — Miss Victoria Kuschura, who died last week at Duluth, Minn., is said to have been born in 1804, in Poland.

In the issue of the Journal for Jan. 26, we chronicled the persistent vigor and laudable energy of Mr. Daniel Short, of Cambridge, Mass., who, at the reputed age of over one hundred years, continued his occupation as driver of a dump-cart in that city. Mr. Short died last week at the Cambridge Relief Hospital, as a result of injuries received by falling from his cart. He is said to have been born on Nov. 11, 1810, in County Tyrone, Ireland, and to have migrated to the United States in 1849.

Daniel Davis, of Royalston, near Athol, Mass, is said to have been born on Feb. 4, 1809.

New Water Supply at Vienna. — Report from the United States Cousul General at Vienna

describes the opening last December of a new aqueduct, which has been under construction for the past twelve years, to furnish a new and adequate water supply to the growing city. This supply is derived from the Salza River, a branch of the Ems, which runs along the base of the Hochschwab Alp, through a district with few inhabitants and no industrial establishments or factories, and is, therefore, practically free from liability to pollution. The aqueduct is 120 miles long and delivers 200,000 cubic meters of water a day at a temperature of 36° F. The total cost of the aqueduct will be equivalent to over $18,000,000.

MURDER BY BACTERIAL TOXINS. — The daily press has lately contained somewhat lurid but nevertheless interesting accounts of the trial at St. Petersburg of a Dr. Pantchenko, a Russian physician charged with having murdered about forty persons by inoculating them with the toxins of diphtheria or cholera. His alleged method of procedure was to obtain these toxins by filtering virulent cultures of the organisms and then injecting a lethal dose of the fluid subcutaneously under the pretext of giving some medicine. The victims died with symptoms of general toxemia, but at autopsy no evidence of infection could be found. Whether or no there be any truth in these allegations, the story suggests another of the possible opportunities for crime which the special knowledge and privileges of the profession place in the hands of physicians.

PRUSSIAN POPULATION AND GERMAN BIRTH-RATE. — Census statistics, published on Feb. 4, in Berlin, show that the population of Prussia has increased from 34,472,509, in 1900, to 40,157,573, in 1910. Despite this gratifying increase, however, it appears that the birth-rate in Germany is already on the decline. In 1875 it was 42 per 1,000; during the decade ending in 1890 it averaged 36 per 1,000; and in 1910 it was 33 per 1,000. There is still a considerable margin, however, between it and the death-rate; and though these figures may represent, as handwriting on the wall, an impending decline of Teutonic racial fecundity and vitality, it should be some time before Germany finds itself in the same plight as France or the native Yankees of New England.

TAXATION OF BACHELORS IN ENGLAND. — An item in the Dundee (Scotland) *Advertiser* contains some interesting information in regard to the taxation of bachelors. In 1695 a minimum tax of a shilling a year was levied in England on every bachelor over twenty-five years of age and on every childless widower of five years' standing, and this tax continued in force until 1706. Its purpose, however, was not to check race suicide, which had not then begun to worry the world, but to provide the royal exchequer with funds for carrying on the wars with France. It should be added that at the same time there was also a tax on births, marriages and burials, so that the net result should have been less to encourage matrimony than to drive able-bodied men into the army, where they became exempt from taxation.

THE PLAGUE EPIDEMIC IN CHINA. — The epidemic of bubonic plague appears to be still active in Manchuria and China. Its victims are chiefly natives, though a certain number of Europeans have already perished of the disease, especially among the physicians and missionaries. On Feb. 1 it was reported from Pekin that 20 deaths from plague had occurred in the Chinese hospital at Tientsin, and it is estimated that probably 500 deaths from the disease are occurring daily in the entire infected district. Report from Berlin on Feb. 3 stated that the plague had broken out along the course of the Shantung Railroad, a German line extending from the seaport of Tsintau to Tsinan-Fu, 247 miles inland. This road has now been closed to second- and third-class traffic. Apparently the authorities in charge are doing the best that under the circumstances can be done to check the spread of the pestilence, but under prevailing oriental conditions, and in face of an infection of exceptional virulence, their efforts are not likely to be successful before a considerably greater extension and mortality have occurred.

## BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Feb. 7, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 49, scarlatina 42, typhoid fever 5, measles 110, smallpox 0, tuberculosis 75.

The death-rate of the reported deaths for the week ending Feb. 7, 1911, was 17.71.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, Feb. 4, 1911, was 220, against 218 the corresponding week of last year, showing an increase of 2 deaths, and making the death-rate for the week, 16.65. Of this number 122 were males and 98 were females; 210 were white and 10 colored; 134 were born in

the United States, 81 in foreign countries and 5 unknown; 48 were of American parentage, 142 of foreign parentage and 30 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 49 cases and 2 deaths; scarlatina, 44 cases and 5 deaths; typhoid fever, 4 cases and 0 deaths; measles, 133 cases and 1 death; tuberculosis, 52 cases and 17 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 28, whooping cough 4, heart disease 36, bronchitis 5. There were 18 deaths from violent causes. The number of children who died under one year was 37; the number under five years, 55. The number of persons who died over sixty years of age was 62. The deaths in public institutions were 83.

Life and Scientific Works of Alexander Agassiz. — A memorial address on this subject is to be delivered by Sir John Murray in Sanders Theatre, Harvard University, on Tuesday evening, Feb. 14.

William Belden Noble Lecturer. — Wilfred T. Grenfell, M.R.C.S., L.R.C.P., M.D. (Hon.), LL.D., has been appointed lecturer on the William Belden Noble Foundation for 1911–12 at Harvard University.

Appointment of Dr. Dyer. — The appointment was announced last week of Dr. Robert E. Dyer, of South Boston, as veterinarian to assist Dr. Alexander Burr, of the Bureau of Dairy Inspection of the Boston Health Department.

Fines for Failure to Report Ophthalmia. — A physician and a nurse were fined $20 and $10 respectively last week before the Boston Municipal Court for failure to report a case of ophthalmia neonatorum upon which they were in attendance.

New Building of Massachusetts Homœopathic Hospital. — On the afternoon of Feb. 4, at the Massachusetts Homœopathic Hospital, the cornerstone of the new Robert Dawson Evans Memorial Building for Clinical Research and Preventive Medicine was laid with appropriate ceremonies.

A Living Centenarian. — Mrs. Calvin Brigham, of Worcester, Mass., celebrated, last week, the supposed centennial anniversary of her birth. Her maiden name was Susan S. Wetherbee, and she is said to have been born on Feb. 3, 1811, at Acton, Mass. In 1830 she came to Worcester, where she subsequently married and has lived ever since. She has been a widow for the past forty-five years. Her health was excellent until two months ago.

Needs of the Massachusetts School for Feeble-Minded. — At a hearing last week before the committee of the state legislature on public charitable institutions, Dr. Walter E. Fernald, of the Massachusetts School for Feeble-Minded, appeared in support of his request of an addition of $25,000 for that institution, $15,000 for an addition to the Nurses' Home and $10,000 for a new building for adult male patients.

Associate Membership in Boston Medical Library. — Recently adopted changes in the by-laws of the Boston Medical Library establish an associate membership, to which are eligible properly qualified physicians living outside Boston. Physicians resident in Boston may be associates only during the first five years after receiving their medical degree. It is provided that "associates shall have the same privileges as Fellows, except that they shall have no vote. They shall pay half the dues of Fellows."

Diphtheria in Fitchburg. — During the current winter diphtheria has been more than usually prevalent among the public schoolchildren of Fitchburg, Mass. Up to the end of January, 440 cases of the disease had been reported in that city, and since that time there have been about 260 more. Only one death has thus far occurred in this epidemic. The schools have not been closed, but an extensive series of cultures has been taken among the pupils and a number of carriers found. On account of the recent rapid increase in the incidence of the infection, it is purposed to pursue more rigorous quarantine measures in the effort to check the spread of the disease immediately.

Nitrous Oxide and Oxygen Anesthesia. — At the Harvard Dental School, on Jan. 31, Dr. Charles K. Teter, of Cleveland, Ohio, made an address on "The Uses for Nitrous Oxide and Oxygen in Dental Surgery," and subsequently gave several practical demonstrations of this method of anesthesia. On Feb. 1, in the amphitheater of the Massachusetts General Hospital, he made similar demonstration of its applicability for the purposes of general surgery. Dr. Teter is an expert in this subject, and his recent visit to Boston has afforded the profession of this city valuable opportunity to see and study his methods. Those who were unable to do so may find them outlined in his paper on "Nitrous Oxide and

Oxygen," read before the meeting of the Northwestern Dental Association in Boston last October. The combined use of nitrous oxide and oxygen seems to afford a safe and valuable means of general anesthesia in certain cases in which the use of the commoner anesthetic agents is contraindicated. It deserves study and judicious employment both in dental and in general surgery.

### NEW YORK.

MT. SINAI HOSPITAL ASSOCIATION. — The fifty-eighth annual meeting of the Mount Sinai Hospital Association was held on Jan. 22. The receipts of the hospital for the year were $426,138, or $12,228 more than the expenditures. Bequests amounting to $73,762 had been received, which reduced the deficit of the institution to $10,228.

EPIDEMIC OF SCARLET FEVER. — An epidemic of scarlet fever is prevailing at Ossining and other places along the Hudson River, and on Jan. 27, Dr. Robert T. Irvine, the health officer, and other officials of the town of Ossining held a conference with representatives of the State Department of Health in regard to the situation.

MEMORIAL MEETING FOR DRS. ELIZABETH AND EMILY BLACKWELL. — A memorial meeting in honor of the late Drs. Elizabeth and Emily Blackwell, the pioneer women in medicine in this country, was held at the New York Academy of Medicine, and among the speakers were Drs. William H. Welch, of Johns Hopkins University; Stephen Smith, and Abraham Jacobi.

SURGICAL CLINIC FOR ANIMALS. — A surgical clinic for animals has been opened at the Cornell Medical College, under the direction of Dr. F. W. Gwyn, professor of operative and clinical surgery, with Dr. Thomas G. Sherwood veterinarian in charge. This clinic is designed to supplement that of the New York League for Animals, to which Mrs. Russell Sage recently contributed $1,500, which, it is stated, cares only for medical cases. Aside from the usefulness of the clinic to the poor, Dr. Gwyn believes that its work will prove of decided value to the Cornell students.

MEMORIAL TO DR. MACDONALD. — On Feb. 3 Governor Dix was elected president of an association which has been organized to raise funds for a memorial in honor of Dr. Willis G. MacDonald, the distinguished Albany surgeon, who died recently. The association met at the State Capitol, and the hope was expressed that $100,000 might be raised for a laboratory in connection with the Albany Medical College, in which Dr. MacDonald was professor of surgery.

THE PRICE OF A POUND OF FLESH. — Municipal Court Justice Davies was recently called upon to decide, as in the case of "The Merchant of Venice," upon the commercial value of a pound of flesh. A certain Harlem practitioner had brought suit for the collection of a bill, one item of which was "$14 for the removal of fourteen pounds of excess avoirdupois tissue." After the hearing of the case the magistrate decided that the rate of $1 a pound was fair. As some of the patient's surplus flesh had come back, however, this was considered a complicating circumstance, and accordingly the doctor was asked if it was his custom to grant rebates if the fat came back. "In that case," the Court went on to say, "I will allow a leeway of two pounds, and award you a decision of $12, which is your normal rate with a margin for debatable differences."

SCHOOL INSTRUCTION IN SEX HYGIENE. — The fifth congress of the American School Hygiene Association was held at the New York Academy of Medicine on Feb. 1, 2 and 3. Dr. Luther H. Gulick, of New York, presided, and among the features was an address on "School Instruction in Sex Hygiene" contributed by Charles W. Eliot, president emeritus of Harvard University.

BETH ISRAEL HOSPITAL. — The annual meeting of the Beth Israel Hospital was held on Jan. 29. During the past year 2,114 patients were treated, and of these, 1,149 were born in Russia, 527 in the United States, and 201 in Austria-Hungary and Galicia. Seven other nationalities were also represented. The total receipts for the year were $122,965, and the total expenses $123,026. It was announced that the site for a new building had not been selected, but it was hoped that this would shortly be done. The subscriptions to the building fund already amount to $188,609, of which $74,109 has been actually paid.

PURE MILK FOR INFANTS. MEASLES HOSPITAL. — In an address at the New York Academy of Medicine, on Jan. 27, on "Some Features of the Work of the Department of Health," Commissioner Lederle announced that the department, with the $40,000 recently appropriated for the purpose by the Board of Estimate and Apportionment, would soon open fifteen stations for the dispensing of pure milk for infants. This new departure, he said, had been decided upon when Nathan Strauss thought of giving up the milk depots which he had been maintaining. The latter were now to be continued, but the new

stations were not designed to compete with those of Mr. Strauss, and would be located in different neighborhoods. The health department would not dispense free milk, but sell it at as low a price as possible. He also announced that plans had been made for the erection of a hospital for measles patients at the foot of East Sixteenth Street, at a cost of $200,000; that a dormitory for employees of the city hospitals, to cost $85,000, would be built adjoining this, and that an extension, costing $100,000, would be made to the tuberculosis hospital on North Brother Island.

Appeal from Verdict for Malicious Prosecution. — The County Medical Society has won its appeal to the Appellate Division of the New York Supreme Court from a verdict of $7,500 for malicious prosecution awarded by a supreme court jury to one Paul Schmidt. Schmidt and his associate, Carolus Conradus, were prosecuted by the society for illegally practicing medicine, in 1909 and were discharged in the Court of Special Sessions. The Appellate Division holds unanimously that the society was justified in bringing Schmidt to trial, and in delivering the opinion Justice McLaughlin says: "I do not see how any person of ordinary intelligence would not have probable cause for believing that the plaintiff [Schmidt] was engaged in the practice of medicine. . . . These facts, being uncontradicted and unexplained, justified the defendant [the medical society] in doing what it did. The trial court should have so held and dismissed the complaint at the close of the plaintiff's case, and, having failed to do that, should have directed a verdict for the defendant at the conclusion of the whole case."

Increase of Suicides and Homicides. — A marked increase in the city in the number of homicides and suicides by shooting has led officials of the coroner's office to start a movement which they hope will lead to new legislation restricting the sale and carrying of firearms, especially revolvers. Based upon a study of conditions concerning homicides and suicides for the last thirteen years, a list of recommendations to the legislature has been drawn up by George Petit Le Brun, one of the coroner's clerks. The annual report of the coroner's office, just made public, also urges legislative action. "The increase of homicide by shooting," it says, "indicates the urgent necessity of the proper authorities taking some measures for the regulation of the indiscriminate sale and carrying of firearms." The report shows that in the borough of Manhattan the total number of homicides in 1910 was 185, an increase of 75 over those of 1909. The total number of deaths from all causes reported to the coroners in 1910 was 5,408, an increase of 186 over the previous year, and of this total, 2,483 were of a violent character, showing an average of more than 6 violent deaths for each day of the year. The total number of suicides was 485, an increase of only 2 over 1909. Gas was the principal agent of death employed,—in 142 cases,—but the number of suicides by shooting was nearly as large, 133; while there were but 28 deaths from poisoning. In 1900 no less than 185 suicidal deaths were from carbolic acid, but within the last few years, on account of the difficulty of procuring poisons, in consequence of the stricter regulations regarding their sale, there has been a marked decrease in suicide by poison.

Commission to Determine Robin's Sanity. — Judge Swann of the General Sessions Court recently appointed Drs. Charles L. Dana and Pearce Bailey as a commission to inquire into the mental condition of Joseph G. Robin, who is under indictment for grand larceny in connection with the closing of the Northern and the Washington savings banks. The method adopted in this case is new, the practice previously employed having been to have a commission consisting of a physician, a lawyer and a layman act with a sheriff's jury. Robin's examination was under Section 836 of the new Penal Law, which provides that two physicians shall be appointed by the court to examine a person accused of crime whose sanity is in question, and then advise the court and jury. When the case came up in court on Jan. 31, the prisoner was declared insane by Drs. Dana and Bailey; but, notwithstanding their testimony and that of four other well-known alienists to this effect, the jury rendered a verdict that he was sane, and Judge Swann expressed himself as satisfied with their decision. The other alienists were Drs. Allan McLane Hamilton and Smith Ely Jelliffe, of New York; and Dr. William A. White, of Washington, who had examined Robin for the district attorney; and Dr. Austin Flint, who had examined him for the defense. There was no dissenting opinion as to his insanity among these experts, and, as a result of this ignoring of their testimony, the Section on Neurology and Psychiatry of the New York Academy of Medicine, when it met for its monthly session on Feb. 1, resolved itself into an indignation meeting to protest against the court proceedings. After considerable discussion it was voted

that the chairman of the section, Dr. Schlapp, should appoint a committee to formulate some plan of action.

INVESTIGATION OF POLIOMYELITIS. — The Rochester Academy of Medicine has adopted resolutions asking the State Department of Health to make a field investigation of epidemic poliomyelitis and petitioning the legislature to make an appropriation for the suppression of the disease, as has been done by the legislatures of Massachusetts, Pennsylvania and other states. In the resolutions it is stated that "the attention of the State Commissioner of Health is called to the facts that poliomyelitis (infantile paralysis) is prevalent in Canada along the Niagara frontier, that there is constant intercourse during the summer between Canada and New York state, that many cases in Buffalo in 1910 were probably infected in Canada, and that interchange of information and an agreement as to quarantine regarding poliomyelitis between Ontario and New York state would be most desirable. It is obvious that the disease can only be watched and controlled by a strong central authority, the State Health Commissioner, and that he should have a staff of skilled specialists at his disposal." In New York City sixteen cases of poliomyelitis have been reported to the Board of Health since November last, when the disease was declared communicable and was included in that section of the Sanitary Code which requires physicians to report cases. Of late, the Division of Communicable Diseases of the Health Department has devoted special attention to the clinical history and nature of this disease, and on Feb. 3 Commissioner Lederle made public a report on the subject. In this a description of the symptoms is given; after which it is stated that "the period of incubation varies widely, from two to thirty days. The average appears to be seven to ten days. The so-called abortive cases may act as carriers, and there are also many authentic cases on record in which the disease was in all probability carried by a third person. The duration of the period of infectivity is unknown, which leaves the question of isolation and quarantine unsettled."

## Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
JAN. 28, 1911.

1. *MATAS, R., AND ALLEN, C. W. *Occlusion of Large Surgical Arteries with Removable Metallic Bands to Test the Efficiency of the Collateral Circulation.*
2. *CHALFANT, S. A. *Arteriosclerosis of Uterine Vessels with a Consideration of Cause of Hemorrhage and Report of Cases.*
3. WILLIAMS, J. H. *An Aspirating Device.*
4. SMITH, F. C. *Cough during Auscultation in the Diagnosis of Pulmonary Tuberculosis.*
5. TUCKER, B. R. *Pellagra, with Analytical Study of Fifty-Five Non-Institutional or Sporadic Cases.*
6. *Discussion on Pellagra.*
7. STILES AND HURTY. *Discussion on the Sanitary Outhouse.*
8. GUTHRIE, G. W. *The Making of a Surgeon.*
9. GUNN, H. *Hookworm Disease in Mines in California.*
10. FAUNTLEROY, A. M. *Report of a Case of Splenic Abscess.*
11. *GRAHAM, C. *Idiosyncrasy to Aspirin.*
12. STEVENSON, M. D. *The Use of Cylindrical Gauze and Cotton Drains in Discharging Ears.*
13. SOPER, H. W. *Must the Tincture of Guaiac be Freshly Prepared?*
14. BEARDSLEY, E. J. G. *An Easy and Painless Method of Removing Adhesive Plaster.*
15. TAYLOR, A. E. *The Treatment of Exophthalmic Goiter with Specific Antiserum.*
16. GRANDY, C. C. *Chronic Influenzal Rhinitis Promptly Improved by Vaccine Therapy.*
17. GARRATT, J. M. *Röntgenographic Examination of the Bladder.*
18. *WERELIUS, A. *Ureterotubal Anastomosis.*
19. KRAMER, S. P. *The Function of Choroid Plexuses of the Cerebral Ventricles and Its Relation to that of the Pituitary Gland.*
20. NILES, G. M. *Optimistic Therapeutics.*

1. Matas and Allen have found experimentally that unless trauma be sufficiently marked to crush the tissues throughout the entire thickness of the vessel wall, no changes will be noted either in the endothelial lining or in the inner layers of the muscular coat in vessels which have been clamped for seventy-two hours or less. Longer pressure causes changes, the degree of which is measured by the length of pressure.

2. Chalfant ascribes the cause of uterine hemorrhage in the arteriosclerotic type of cases to some loss of functional power of the uterine muscle, for proper uterine contraction is essential to the control of uterine bleeding. There is no pathological condition present in this type of case that is not found in others not giving any history of hemorrhage, with the possible exception of increase in number and size of the vessels. The loss of functional power is due probably to the development of fibrous and elastic tissue from subinvolution.

11. Graham reports a case of idiosyncracy to aspirin in which one 5-gr. dose produced almost immediate symptoms, with edema of the mucous membranes of the eyes, nose, mouth and marked shock followed by a long period of somnolence.

18. Werelius is advising and trying out the tubal implantation of the ureters in females when it is advisable to extirpate the bladder or for extrophy of that viscus.

[E. H. R.]

BULLETIN OF THE JOHNS HOPKINS HOSPITAL.
JANUARY, 1911.

1. *BROWN, T. R. *Urinary Hyperacidity and Its Relation to Neuritis, Neuralgia and Myalgia.*
2. INGRAHAM, C. B. *An Analysis of the Course of Labor in One Hundred Occiput Posterior Presentations.*
3. GLASER, C. *Investigation into Several Cases of Poisoning by Vapors of "C. P." Benzol.*
4. *AUSTRIAN, C. R. *The Viscosity of the Blood in Health and Disease.*
5. SIMONDS, J. P. *Sarcoma and Tuberculosis. Report of a Case.*
6. CULLEN, T. S. *Carcinoma of the Right Fallopian Tube Readily Palpable through the Abdomen.*
7. BRÖDEL, M. *In Memoriam. August Horn.*

1. Brown discusses urinary hyperacidity and its relation, which he believes to be a very definite one, to certain so-called idiopathic cases of neuritis, neuralgia and myalgia. The hyperacidity he explains as due to some metabolic change. In these cases a simple dietary, copious water drinking and the administration of alkalies to reduce the acidity of the urine to normal has been followed by marked relief.

4. Austrian presents an elaborate and interesting study

of the viscosity of the blood in health and in disease. In health it is greater in men than in women; viscosity depends on the number of red corpuscles, the hemoglobin content and the gaseous richness; it is not influenced by diets used over short periods of time. The viscosity of normal plasma is 1.7–2.0, average 1.86. In disease it varies greatly. In anemias, primary or secondary, it is reduced and with regeneration of blood becomes normal. In leukemia there is hypoviscosity of the blood and hyperviscosity of the plasma. Both are increased in polycythemia. In cardiac disease there is no change in relation, both are increased. In icterus there is generally increased viscosity, as is the case in pneumonia. In typhoid fever the viscosity varies with the anemia. The Hess viscometer was used in every case. The figures show the relation of the viscosity of blood to water. [J. B. H.]

### The Lancet.

#### Dec. 31, 1910.

1. *Rozenraad, O. *A Lecture on Obesity and Certain Changes of Metabolism.*
2. *Nesfield, V. B. *A Simple Serum Diagnosis for Tubercle; also a Method for Obtaining an Immunity Index.*
3. Abraham, J. J. *The Clinical Aspects of "Juvenile General Paralysis," with an Account of a Case Treated with "606" and Observations on Prophylaxis.*

1. Rozenraad gives a brief survey of the changes of metabolism in obesity and its treatment, with a discussion as to diet and the so-called "water-cures" and their value.

2. Nesfield describes a "simple" serum diagnosis for tubercle. To the average reader it is so complex as to be almost unintelligible. [J. B. H.]

#### Jan. 7, 1911.

1. Morris, H. *Speech on the Report by the Education Committee Presented to the General Medical Council.*
2. *Shaw, H. B. *Ultra-Chronic Pulmonary Tuberculosis.*
3. Battle, W. H. *Some of the More Rare Causes of the Acute Abdomen.*
4. Lewers, A. H. N. *A Case of Interstitial Gestation at the Third or Fourth Month, where the Sac was removed Unruptured with the Body of the Uterus by Abdominal Hysterectomy.*
5. *Fisher, T. *A Note on the Cardiac Diastolic Sound and Impulse.*
6. Wood, N. *British Health Resorts for Foreign Invalids.*
7. *Yeo, I. B. *Pulmonary Tuberculosis Treated by Continuous Antiseptic Inhalation.*
8. Nash, W. G. *Perithelioma (Angiosarcoma) of the Great Omentum; Excision.*
9. Tidy, H. L. *The Relation of Acute Phosphorus Poisoning to Acidosis.*
10. Laslett, E. E. *Note on a Case of Digitalis Heart Block.*
11. Grünbaum, O. *The Technic of Intravenous Injection of Ehrlich-Hata Preparation "606."*
12. Hericourt, J. *Raw Meat and Raw Meat Juice in the Treatment of Consumptive Diseases (Zonotherapy).*

2. Shaw presents tables and statistics to show that pulmonary tuberculosis is on the average a far more chronic disease than is generally considered to be the case. Many such chronic cases, as long as they are carefully instructed in methods by which they can avoid infecting others and maintain their own health, can go to work and discharge their duties in life as any other person. Instead of putting three to four years as the average duration of the disease, he would place it at seven to eight years or more.

5. Fisher calls attention to a diastolic murmur which is occasionally heard at the apex of the heart and is often mistaken for mitral stenosis; he believes it to be a purely functional murmur. Such a murmur is rarely constant, but comes and goes.

7. Yeo records another case of advanced pulmonary tuberculosis much benefited by wearing a mask by means of which she inhaled constantly an antiseptic vapor. The patient was in a sanatorium while undergoing treatment. He states that "he knows of" many other cases benefited by this treatment. (*Cf.* editorial note. Despite this case and other isolated cases, the inhalation treatment of pulmonary tuberculosis cannot yet be accepted as of much value. — J. B. H.) [J. B. H.]

### British Medical Journal.

#### Jan. 7, 1911.

1. *Bennett, W. *The Treatment of Venous Thrombosis Mainly from the Surgical Aspect.*
2. *Poynton, F. J. *Some of the Rarer Occurrences in the Rheumatism of Childhood.*
3. *Fenwick, E. H. *Clinical Lectures on Kidney Pain.*
4. *Calwell, W. *An Address on the Prevention of Heart Disease.*
5. Little, E. G. *The Treatment of Rodent Ulcer.*
6. Lane, W. A. *Excision of a Cancerous Segment of the Esophagus. Restoration of the Esophagus by Means of Skin Flap.*

1. Bennett, in an article on the surgical treatment of venous thrombosis, describes the operation itself both in simple thrombosis and in thrombosis with embolism and some points relating to the general treatment of thrombosis. He briefly discusses varicosity consequent on thrombosis and its treatment.

2. Poynton, in a paper on rheumatism in childhood, describes the occurrence of rashes, erythema nodosum, venous thrombosis, tachycardia, mastitis and epistaxis.

3. Fenwick, in a clinical lecture on kidney pain, starts with two aphorisms: (1) the commonest structural change accompanying kidney pain is dilation of the renal pelvis; (2) the commonest cause of kidney pain is dilation of the renal pelvis. He discusses (1) the value as a symptom in kidney diseases (excluding diabetes and certain poisons) of excessive thirst. (2) The posture of the patient in sleep; in acute inflammations the patient *cannot* sleep on the affected side. (3) Intermittent diuresis, which in his opinion always marks some dilation of the pelvis. This he believes explains many cases of so-called diabetes insipidus. He concludes by discussing the operative points of dilated renal pelvis.

4. Calwell, in an address on the prevention of heart disease, among other things describes a much-neglected factor in causing a chronic weak heart — hard physical exercise when the patient is out of training either from previous lack of exercise or during or after slight ailments, such as common colds, grip, etc. (In the reviewer's opinion this is an important and much-neglected source of trouble among young men, recent college graduates who are apt to consider strenuous physical exercise a cure for all ills. — J. B. H.) [J. B. H.]

### The Practitioner.

#### January, 1911.

1. Mott, F. W. *Neurasthenia and Some Associated Conditions.*
2. Ferrier, D. *Neurasthenia and Drugs.*
3. Harris, W. *Traumatic Neurasthenia.*
4. Clarke, E. *Neurasthenia and Eyestrain.*
5. Fleming, R. A. *Neurasthenia and Gastralgia.*
6. Riviere, C. *Neurasthenia in Children.*
7. Holmes, G. *The Sexual Element in the Neurasthenia of Men.*
8. MacNaughton-Jones, H. *The Sexual Element in the Neurasthenia of Women.*
9. Thomson, H. C. *Mental Therapeutics in Neurasthenia.*
10. Tredgold, A. F. *Neurasthenia and Insanity.*
11. Suckling, C. W. *Neurasthenia and Movable Kidney.*
12. Smith, P. C. C. *Neurasthenia Minor.*
13. Williams, T. A. *The More Certain Control of Traumatic Neurosis.*
14. Paton, D. N. *The Treatment of Neurasthenia by Diet.*
15. Brach, F. *The Educational Treatment of Neurasthenia.*
16. Buckley, C. W. *The Treatment of Neurasthenia by Rest, Diet and Massage.*
17. Le Duc, S. *Electrical Treatment of Neurasthenia.*
18. Wood, N. *The Climatic, Balneotherapeutic and Sanatorium Treatment of Neurasthenia.*
19. Riviere, J. A. *The Treatment of Neurasthenia by Physical Methods.*
20. Tuckey, C. L. *Treatment of Neurasthenia by Hypnotism and Suggestion.*

This special number of the *Practitioner* is devoted to a series of articles on neurasthenia, the different phases and forms of the condition, its relation to other conditions and the various forms of treatment. The articles are short and general in character and are sufficiently explained by their titles. [J. B. H.]

EDINBURGH MEDICAL JOURNAL.

JANUARY, 1911.

1. *CAIRD, F. M. *Epithelioma of the Tongue. A Review of Sixty Hospital Cases.*
2. HAULTAIN, F. W. N. *A Retrospect and Comparison of the Progress of Midwifery and Gynecology.*
3. *GREIG, D. M. *On Recurrent Enlargement of the Salivary Glands.*

1. Caird makes a careful study of sixty cases of epithelioma of the tongue, gives the details and technic of operation and presents his cases in tabular form.

3. Greig discusses some cases of recurrent enlargement of the salivary glands with five illustrative cases. He classifies the causes of such swellings as follows: (*a*) Causes connected with perverted secretion. (*b*) Causes connected with the ducts, such as trauma or ulceration. (*c*) Indefinite causes connected with the glandular function of the gland. He reviews the literature and previously reported cases on this subject. [J. B. H.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 1.

JAN. 5, 1911.

1. ELSCHNIG. *The Pathology and Treatment of Eye Injuries.*
2. HERING, H. E. *A Post-Mortem Auscultation Phenomenon in Man.*
3. LEO, H. *The Anti-Inflammatory Action of Soluble, Neutral Calcium Salts.*
4. *KAUSCH, W. *Intravenous and Subcutaneous Nutrition with Grape Sugar.*
5. v. BÓKAY, J. *Essay on the Knowledge of Serum Sickness.*
6. KREIBICH. *Salvarsan.*
7. BETTMANN. *Herpes Zoster after Salvarsan Injection.*
8. STERN, C. *Another Case of Ocular Muscle Paralysis after Salvarsan.*
9. *LISSAUER, M. *The Knowledge of Carcinomatous Meningitis.*
10. LOEB, L. *The Importance of the Corpus Luteum in the Periodicity of the Sexual Cycle in Female Mammals.*
11. NAGELSCHMIDT, F. *The Clinical Importance of Diathermia.*

4. Grape sugar can be introduced into the body intravenously in a 10% solution and subcutaneously in a 5% solution up to 1,000 ccm. and more a day. This method ought to be of great value in furnishing the body with nourishment during cholera.

9. Lissauer reports an interesting case of carcinoma metastasis into the meninges and thinks that such invasion into the meninges and brain is more frequent than is generally supposed. [C. F., JR.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 1.

JAN. 3, 1911.

1. *EHRLICH, P. *Salvarsan Treatment: Retrospect and Prospects.*
2. *GOTTLIEB, R., AND GAMBACH, R. *Digipuratum.*
3. RIEDEL. *The Treatment of Unilateral Hare-Lip complicated with Cleft Palate.*
4. KAPPIS, M. *Some Practical Points for the Treatment of Peritoneal Ileus.*
5. ROLLY, F. *Sepsis Due to the Friedländer Bacillus.*
6. BENARIO. *Syphilis of the Nervous System Recurring after Mercurial Treatment.*
7. KREUZFUCHS, S. *Symptomatology and Frequency of Intrathoracic Struma.*
8. SCHMIDT, A., AND DAVID, O. *Chloroform-Oxygen Narcosis.*
9. BEISELE, P. *The Reaction of the Urine to Liquor Bellostii in General Paresis.*
10. STRAUSS, A. *The Technic of Treatment with Carbonic-Acid Snow in Skin Diseases.*
11. FRÜND, H. *The Technic of Treatment with Carbonic-Acid Snow.*
12. REICHER, K., AND STEIN, E. H. *A New Vessel Canula.*
13. ROLOFF. *Fatal Injury from Masturbation by Rectum.*
14. REICHE, F. *X-Ray Diagnosis of Penetrating Gastric Ulcer.*
15. MÜLLER, F. *Talk on the Opening of the New Policlinic Building in Munich.*

1. Ehrlich reviews the results thus far obtained in the treatment of syphilis with "606." He says it is still too soon to affirm that lasting cures can be effected with a single dose of 0.4 to 0.5 gm., but he believes, nevertheless, that complete cures have been effected. Among the evidence for this he cites cases in which, after a prompt cure of the original chancre, other chancres appeared in other places. These were attributed to reinfection. It seems that most of the deaths following the use of "606" might have been avoided if Ehrlich's advice had been more strictly followed. He emphasizes the danger of giving it when the heart is weak, and in cachectic states not due to syphilis. He thinks that it may sometimes be wise to repeat the dose and to use mercury in the interval. The neutral emulsion has proved less satisfactory than the solution, and the intravenous method has the advantage of avoiding local lesions and difficulties of absorption.

2. The writers say that in the two years since digipuratum was first used it has proved itself the best preparation of digitalis. The advantages are that it has a known strength, that it disturbes the digestion less than any other preparation of digitalis and that it keeps well. [G. C. S.]

BERLINER KLINISCHE WOCHENSCHRIFT. No. 1.

JAN. 2, 1911.

1. v. HANSEMANN, D. *Typical and Atypical Forms of Phthisis.*
2. FRITSCH, K. *Protrusion of an Epigastric Hernia through a Gap in the Ensiform Cartilage. (A Contribution to the Etiology of Epigastric Hernia.)*
3. BUSCHKE, A. *Clinical and Experimental Observations on Malignant Syphilis, together with Some Remarks on "606."*
4. KALB, R. *The Cutaneous Reaction of Syphilis in the Treatment with Arsenobensol, and Its Significance.*
5. *PEISER, J. *The Treatment of Congenital Syphilis in the Infant by the Inoculation of the Nursing Mother with "606."*
6. COHN, M. *The Anatomic Substrata of the X-Ray Picture of the Lung and Its Importance in the X-Ray Diagnosis of Phthisis.*
7. ST. ENGEL AND TURNAU, L. *A Reaction of the Urine of Breast-Fed Infants.*
8. FROEHLICH, E. *Observations on "Adalin," a New Sedative and Narcotic.*
9. HOFFMANN. *Progress in the Field of Tropical Diseases.*
10. HILDEBRAND, O. *Life of Franz König.*

5. The author reviews the results obtained by other observers. He reports two cases of his own in which this treatment was followed. In neither case could there be found a trace of arsenic in the milk. The temporary improvement seemed due to the toxins in the milk due to the destruction of the organisms in the mother. Both of these cases finally resulted fatally and came to autopsy. The first case showed no specific organisms; the second case, however, did. [J. L. H.]

NO. 2. JAN. 9, 1911.

1. EWALD, C. A. *Rectoscopy and Severe Anemias due to Hemorrhages from High-Seated Varices of the Lower Portion of the Large Intestine.*
2. NICOLAI, G. F. *The Electrocardiogram in Dextrocardia and Other Malpositions of the Heart.*
3. NEUFELD, F., AND DOLD, H. *Bacterial Susceptibility and Its Importance in Infection.*
4. FRAENKEL, L. *The Interstitial Ovarian Gland.*
5. *ROTH. *Unusual Cystic and Renal Calculi.*
6. v. HANSEMANN, D. *Unusual Case of Pulmonary Syphilis.*
7. BEHR, M. *The Use of Short Ethyl Chloride Narcosis.*
8. MEYER, F. *Concerning Non-Toxic Emulsion of Tubercle Bacilli ("S. B. E.").*
9. FRIEDEMANN, U. *The Theory of Anaphylaxis.*

10. Meyer, G. *Medical Rescue Service for Aerial Courses in 1787.*

5. The author quotes many case histories showing unusual types of calculi in the urinary tract. The article is illustrated with seven cuts from photographs. He points out the value of the x-ray picture in making a diagnosis but says that rarely if ever should a diagnosis rest on the x-ray plate alone. He emphasises the importance of cystoscopy in all cases of hematuria. [J. L. H.]

Annales de l'Institut Pasteur.

Nov. 25, 1910.

1. *Landsteiner, K., and Levaditi, C. *Experimental Study of Acute Poliomyelitis (Heine-Médin's Disease).*
2. Besredka, A. *Anti-Anaphylaxis. The Procedure with Small Doses and Injections Frequently Repeated.*
3. Broquet, C. *Method of Preserving Organs from Plague Cases for Diagnosis.*
4. de Jong, D. A. *Relation between Avian and Mammalian Tuberculosis.*
5. Sergent, E., and Sergent, E. *Epidemiologic and Prophylactic Studies on Malaria.*

1. Landsteiner and Levaditi have been carrying on experiments with poliomyelitis virus along similar lines to those followed by Flexner and Lewis in New York, by Leiner and Wiesner in Weichselbaum's laboratory at Vienna, and by Roemer at Marburg. In this article they describe the results of their experiments and compare them with other authors' results. They describe first the clinical course of this disease when transmitted by inoculation into monkeys. There are two chief types, the ascending and the superior, dependent upon what part of the nervous system is attacked. On histologic study the lesions are found similar to those seen in man. No Negri bodies, similar to those found in rabies, were observed. Animals sacrificed during the incubation period showed no lesions. Attempts at repair are seen after the acute stage passes off. The virus disappears from the central nervous system within a few days after the acute period. Degenerative lesions occur in the muscles.

The virus is filterable through the very finest filters and is more readily preserved than the virus of rabies. *In vitro* menthol, potassium permanganate and hydrogen peroxide destroy the virus. Injections into the spinal or cranial cavity and intraperitoneally are the most successful. Some success has been had with intravenous, subcutaneous and intraneural injections. Proof seems to exist that the virus travels along the nerves to the central nervous system. It is difficult to infect by ingestion, but possible especially on injured mucous membranes. Infection by the respiratory tract is possible, especially after injury to the mucous membrane.

The best material for infecting purposes is the macerated nerve tissue. Cerebrospinal fluid is not satisfactory. Some have had success from nasal secretions. Other body fluids and organs have given negative results as a rule. The authors have never seen or read of any evidence of contagiousness among monkeys. Some immunity is established by a light attack. Vaccination by infectious material of diminished virulence offers protection to otherwise fatal doses. Serum of monkeys in an acute attack will destroy the power of the virus *in vitro* but does not help in the living monkey when injected during the incubation period, nor do any of the drugs tried, such as arsenic. [C. F., Jr.]

Bullettino delle Scienze Mediche.

November, 1910.

1. *Melli, A. *The Resistance of Corpuscles in States of Experimental Acidosis Produced by Hydrochloric Acid.*

1. This entire number consists of an elaborate experimental study by Melli of the resistance of red blood corpuscles in acidosis. After considering the signs of their resistance in various morbid processes and in physiologic conditions, he describes the methods employed in his research and reports his experiments and results. He concludes that under normal conditions the minimal resistance of canine red blood corpuscles to chlorine solutions is from 46 to 56%, the average from 36 to 44%. Both these diminish in acid intoxications. Acute acidosis may be recovered from, but chronic acidosis conduces to inevitable death. States of acidosis, whether acute or chronic, accelerate and exaggerate the destructive processes of the red corpuscles. The author believes that these findings have an important clinical bearing in such conditions as gout and scorbutus. [R. M. G.]

## Obituaries.

### JAMES KERR, M.D.

Dr. James Kerr, of Washington, D. C., who died in Warrenton, Va., on Feb. 2, was born on Dec. 14, 1848, at Portstewart, County Derry, Ireland. He graduated from the Royal University, Dublin, in 1870, and in the same year received the degrees of M.D. and M.Ch. from Queen's College, Belfast. Coming immediately to Canada, Dr. Kerr served until 1873 as surgeon of the Royal Canadian Mail Service. He then served for a year as surgeon for a royal transport on the Gold Coast Expedition. In 1876 he was married at Brantford, Ont. In 1882 he was appointed chief surgeon of the Canadian Pacific Railway, and in 1883 became professor of surgery and president of the Manitoba Medical College. In 1885 he served as surgeon in the Canadian militia. In 1891 he became professor of surgery at Georgetown Medical College, Washington, D. C., and since then had lived and practiced in that city. He was a member of the Washington Academy of Sciences.

### FREDERICK COGGESHALL, M.D.

Dr. Frederick Coggeshall, who died in Boston on Feb. 1, was born on Jan. 8, 1861, in New York City. He received the degree of A.B. from Harvard in 1886, and that of M.D. in 1892. Immediately after graduation he began the practice of medicine in Boston, and in 1893 was appointed physician for nervous diseases at the Boston Dispensary, a position which he held until shortly before his death. He had also served as physician to the Boston Floating Hospital and as pathologist at the Carney Hospital. He was a member of the American Medical Association, of the American Academy of Medicine, a fellow of The Massachusetts Medical Society, a member of the Boston Medical Library and of the Boston Society for Medical Improvemwnt. He is survived by his widow and by one son.

## Miscellany.

### THE MASSACHUSETTS MEDICAL SOCIETY.

A stated meeting of the Council was held in John Ware Hall, Boston Medical Library, Feb. 1, 1911, at 12 o'clock noon, the President, Dr. George B. Shattuck, in the chair and eighty-one councillors present.

The record of the last meeting was read and accepted.

Dr. O. F. Wadsworth, for the Committee on

Publications, announced that Dr. David L. Edsall, of Philadelphia, would deliver the Shattuck Lecture in 1912.

Dr. Goss reported for the Committee on Membership and Finance, and in accordance with the recommendations of this committee it was voted that the resignation of two members be accepted; also that seven members be placed on the retired list.

The Secretary read the reports of the committees appointed to consider petitions of two members for reinstatement, and it was voted to reinstate them.

Committees were appointed to consider the petitions of three members for reinstatment.

Dr. Rogers, for the Committee on Medical Diplomas, presented a revised list of the medical schools and colleges of the United States and Canada for the purposes set forth in By-Law 1, and the list was adopted by unanimous vote.

The Committee of Arrangements reported, through Dr. G. H. Francis, "that in the opinion of the committee it would not be desirable to hold the annual meeting of The Massachusetts Medical Society in Worcester in 1911." Voted to accept the report.

Dr. E. W. Taylor, for the committee appointed at the last meeting to consider the method of appointment of the officers of the sections, reported as follows:

*Moved:* That the officers of the medical and surgical sections for the annual meeting of The Massachusetts Medical Society be elected as follows:

On the organization of the section meetings the chairman of each section shall appoint a nominating committee of three who shall present to that section nominations for chairman and secretary for the ensuing year, these nominations to be voted upon the same day.

Voted to accept the report.

Upon the nomination of the President the following delegates were appointed:

To the meetings of the American Medical Association for the ensuing two years:

F. H. Thompson, Fitchburg; F. G. Wheatley, North Abington; Hugh Cabot, Boston.

Alternates:

I. S. F. Dodd, Pittsfield; A. Greenwood, Waltham; F. T. Murphy, Boston.

To the annual meetings of the following state societies:

Maine Medical Association: G. K. Blair, Salem; H. W. Manahan, Lawrence.

New Hampshire Medical Society: G. Z. Goodell, Salem; O. P. Porter, Lowell.

Rhode Island Medical Society: A. Greenwood, Waltham; N. S. Hunting, Quincy.

Connecticut State Medical Society: E. A. Bates, Springfield; S. B. Woodward, Worcester.

To the Council on Medical Education and meeting of Association of American Medical Colleges, Chicago, Feb. 27 to March 1: H. C. Ernst, Boston. Alternate: H. D. Arnold, Boston.

Upon the nomination of the President, Dr. C. C. Sheldon, of Lynn, and Dr. E. Flagg, of Boston, were appointed a committee to audit the Treasurer's accounts, and Dr. E. W. Taylor, of Boston, was appointed a member of the Committee on Publications, to fill a vacancy.

Dr. H. D. Arnold made a motion:

That hereafter those members of The Massachusetts Medical Society who attend the meetings of the House of Delegates of the American Medical Association as the authorized representatives of The Massachusetts Medical Society may be reimbursed by the Treasurer of said society for their transportation and ordinary sleeping accommodations while traveling to and returning from said meetings, provided:

1. That the delegate makes claim for such reimbursement within three months from the end of said meeting of the House of Delegates.

2. That the President approves these expenses as reasonable.

3. That the amount paid to any one delegate shall not exceed one hundred dollars for any meeting, the payment of one hundred dollars being authorized if the delegate's expenses (as above specified) exceed that amount.

4. No expenses of the delegates other than the traveling expenses thus specified shall be paid except by special vote of the Council of The Massachusetts Medical Society.

The motion was favored by Dr. Gay and Dr. F. B. Harrington. Dr. Goss, for the Committee on Membership and Finance, stated that the committee had considered the motion of Dr. Arnold and on its merits recommended its passage, at the same time calling attention to the fact that the expenditures of the Society are fast approaching its income. The Treasurer made a statement of the present condition of the finances of the Society and of the probable expenses of the pending suits for malpractice, now five in number, in charge of the society's attorney.

Dr. Arnold, in explanation of his motion, spoke of the importance of the American Medical Association and its work, and the desirability of each state sending a full delegation of representative men, and explained the custom of other states as regards defraying the expenses of their delegates. The motion was opposed by Dr. Goss on the ground of the expense involved, and on being put to vote it was carried by a voice vote.

Dr. Gay moved: That the Secretary notify one or more of the delegates of The Massachusetts Medical Society to the American Medical Association that a brief report of the transactions of the House of Delegates will be expected at the meeting of this Council following the annual meeting of the said House of Delegates. The motion was carried without discussion.

On motion of Dr. A. T. Cabot it was voted: That a committee of three be appointed by the chair to consider the question: Whether the present rule that assigns Fellows to membership in the District Society where they have their legal residence works satisfactorily to bring out the best efficiency of the society and to meet the convenience of the Fellows.

The President appointed as this committee A. T. Cabot, F. R. Sims and W. L. Burrage.

Adjourned at 1.45 P.M.

WALTER L. BURRAGE, *Secretary.*

## INDUSTRIAL TREATMENT OF THE INSANE AT THE GARDNER STATE COLONY.

THE eighth annual report of the trustees of the Massachusetts State Colony for the Insane at Gardner, Mass., presents some interesting details of the work done at that institution during the past year. Describing the industrial training of inmates of the colony, the trustees say:

"With the completion of the two industrial buildings, we have now excellent facilities for the training of our patients in indoor occupations. Patients are now making and mending all our clothing, mending and making our shoes, and all our men are wearing, during the summer, straw hats made by the patients. Our food supply is, in increasing amount, produced by patients. Apart from a purchase of potatoes, made necessary by a loss through freezing, before our new cellars could be completed, we have raised on our farm all the vegetables that we have used during the past year. In some directions we are now producing more of certain articles than we can use ourselves, and the problem of disposing of them is pressing for solution. For example, patients are making large numbers of old-fashioned mats, braided from rags. These are marketable and can be readily sold. It would seem only just that the proceeds of such sales should be retained by the trustees, to be expended in the purchase of material comforts and little luxuries for the patients engaged in production, which we would hardly be justified in buying from our regular appropriation. We therefore recommend that an act be passed, giving such permission to all institutions for the insane where productive labor is encouraged. The returns from the sales of goods would be ample to pay for the cost of the materials used, and leave a surplus."

The report of the superintendent, Dr. Charles E. Thompson, shows that in 1910 the total number of patients cared for was 685, of whom 460 were men. The daily average was 610, as against 560 in 1908. With regard to the benefits of the industrial method of treatment, Dr. Thompson continues:

"Our aim is to treat our patients by the best systematic treatment — occupation — while assisting and encouraging them to aid in their own support. Two questions suggest themselves: First, how much are these patients benefited by industrial treatment? Second, what has been the return coincident with, but distinctly secondary to, this form of treatment? To the first I would answer that we cannot overstate the benefit derived. Individual cases illustrate this best, but taken all together they are far easier to care for, far less untidy, destructive and troublesome; brighter, more active, contented and cheerful. The requests to leave the colony are few, which alone, to those familiar with our hospitals for the mentally afflicted, tells its own story.

"In our endeavor to check existing dementia we are constantly saying to ourselves that this present dementia, and especially the physical inactivity, should not have been allowed to reach this stage, but the same occupations they are now engaged in should have been open to them directly after their discharge from the acute receiving ward. This leads me to say that industries as an important form of treatment belong more to the acute hospital — to prevent patients becoming pauperized institutionally rather than to stimulate them after they have become so. The second question will answer itself by reference to the tables of farm and industrial products raised."

The work done at the Gardner Colony seems a valuable contribution to the important problem of caring for the insane, and serves to emphasize that, when possible, useful occupation is the best medicine and safeguard for them as for all other human beings.

## CENTENARIANS IN ENGLAND.

A RECENT article in the daily press describes interestingly some alleged English centenarians. A portion of it perhaps deserves quotation.

"Colonel Bower recently died in England. Until a few weeks before his death he rode to hounds and did his duty as a magistrate. Death took him to greater activity in his one hundred and second year. Mr. Henry Tomlinson celebrated about the same time, in Chester, his one hundredth birthday. He shaves himself intrepidly every morning, undergoes the frightful ordeal of a family party and comes out unscathed. An English cricketer for the first time in his life was put in to bowl a match on his one hundredth birthday; he took a wicket. Nor are these isolated instances in England. Mr. Watkins, of Marrow, near Guilford, is one hundred and one; he has labored on the land for seventy years and raised a family on wages that never went beyond 11 shillings a week. There is Mr. Coles, of Croyden, hale and chipper at one hundred and three; he has seen service in the Crimea; he made a melodramatic escape from a burning theater. Above all towers Mr. Mitchell, of Workington, one hundred and five years old. He has a recipe for longevity. He drinks six glasses of beer daily and believes firmly in 'eating as little and drinking as much as possible.'"

That English climate and modes of life should be conducive to longevity is not surprising. Mr. Mitchell's recipe for the attainment of old age, however, is hardly to be recommended.

## TREATMENT OF PHTHISIS BY ANTISEPTIC INHALATION.

IN the issue of the *Lancet* for Jan. 7 is an article by Dr. I. Burney Yeo, of London, on "Pulmonary Tuberculosis Treated by Continuous Antiseptic Inhalation." Dr. Yeo reviews his work on the subject, describes a simple form of inhaler which he has devised and reports the beneficial results of its use in his professional experience. The principal substances which he has used for inhalation are carbolic acid, creosote, spirits of turpentine, eucalyptol, thymol, terebene, oleum pini sylvestris, solution of tar in rectified spirit, tincture of benzoin and tincture of iodine, either singly or in various combinations. This method of treatment for phthisis, which in our own country has been advocated for the past twenty-five years by Dr. Beverley Robinson, of New York City, deserves the attention of the profession.

## Correspondence.

### "A POSSIBLE CURE FOR CANCER." A CORRECTION.

CANCER LABORATORY,
BUFFALO, Feb. 3, 1911.

*Mr. Editor:* My attention has been called to a New York Note in the BOSTON MEDICAL AND SURGICAL JOURNAL of Jan. 26, which states that I have announced that I am prepared to supply a serum which has been shown to be effective in treating cancer. This statement is quite wrong. The despatches, which were taken from an interview regarding the work of the New York State Cancer Laboratory, in which reference was made to certain experiments with vaccine, have been so changed from the original as to entirely misrepresent the facts. We have not announced a cure for cancer, and no reference whatever has been made to a serum. Neither do we believe that vaccination will be beneficial in more than a limited percentage of cases. The results obtained in this laboratory have shown that methods which have given experimental results with animals have some applicability to human cases. There have been very encouraging results in a limited number of cases. The method is not applicable to advanced cases; some cases have done badly under this treatment. The matter is still in an experimental state and it is not possible to place the vaccine in the hands of the profession, nor would it be desirable for cases to come to Buffalo at the present time. The results have been sufficiently encouraging to warrant asking the state to provide a small hospital for the purpose of developing and elaborating this and other methods of treatment.

I would ask you to give publicity to this statement in such way as to nullify, as far as possible, the very serious effects of the report appearing in your journal.

Very truly yours,
HARVEY R. GAYLORD, M.D.,
*Director.*

### RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JAN. 21, 1911.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | — | — | Waltham | 7 | 1 |
| Chicago | 747 | 169 | Brookline | 6 | — |
| Philadelphia | — | — | Chicopee | 14 | 7 |
| St. Louis | — | — | Gloucester | 6 | 1 |
| Baltimore | — | — | Medford | 14 | 1 |
| Cleveland | — | — | North Adams | 7 | 3 |
| Buffalo | — | — | Northampton | 4 | — |
| Pittsburg | — | — | Beverly | 5 | — |
| Cincinnati | — | — | Revere | 4 | — |
| Milwaukee | — | — | Leominster | 4 | 1 |
| Washington | — | — | Attleboro | 6 | 1 |
| Providence | — | — | Westfield | 7 | 1 |
| Boston | 243 | 54 | Peabody | — | — |
| Worcester | 48 | 11 | Melrose | 3 | 1 |
| Fall River | 31 | 13 | Hyde Park | 3 | 1 |
| Lowell | 29 | 4 | Woburn | 3 | 0 |
| Cambridge | 30 | 4 | Newburyport | 6 | 1 |
| New Bedford | 35 | 11 | Gardner | 3 | 2 |
| Lynn | 28 | 6 | Marlboro | 3 | 0 |
| Springfield | 25 | 4 | Clinton | 5 | 1 |
| Lawrence | 23 | 8 | Milford | 1 | 0 |
| Somerville | 18 | 1 | Adams | 3 | 3 |
| Holyoke | 20 | 5 | Framingham | 2 | 0 |
| Brockton | 14 | 3 | Weymouth | — | — |
| Malden | 15 | 3 | Watertown | 3 | 1 |
| Haverhill | 11 | — | Southbridge | 3 | 2 |
| Salem | 20 | 6 | Plymouth | — | — |
| Newton | 6 | 1 | Webster | 7 | 3 |
| Fitchburg | — | — | Methuen | 4 | 1 |
| Taunton | 18 | 7 | Wakefield | 1 | — |
| Everett | 8 | 2 | Arlington | 2 | 0 |
| Quincy | 7 | 3 | Greenfield | 4 | — |
| Chelsea | 10 | 1 | Winthrop | 4 | — |
| Pittsfield | — | — | | | |

### RESIGNATION.

DR. JAMES MARSH JACKSON has resigned the position of Instructor in Clinical Medicine at the Harvard Medical School.

### SOCIETY NOTICES.

AMERICAN GASTRO-ENTEROLOGICAL ASSOCIATION. — The fourteenth annual meeting of the American Gastro-Enterological Association will be held at Philadelphia, April 19 and 20, 1911.

NEW ENGLAND HOSPITAL MEDICAL SOCIETY. — The New England Hospital Medical Society will hold its monthly meeting in Kensington Building, Boylston Street, Thursday, Feb. 16, at 8 P.M. Section on Surgery. Chairman, Dr. Emma Culbertson. Subject: Report of some interesting cases of the past year at the New England Hospital.

MARGARET L. NOYES, M.D.,
*Secretary.*

BOSTON MEDICAL LIBRARY IN CONJUNCTION WITH THE SUFFOLK DISTRICT MEDICAL SOCIETY. — General meeting. John Ware Hall, Wednesday, Feb. 15, 1911, at 8.15 P.M. "Acute Inflammation of Long Bones: Results in One Hundred Cases from the Pennsylvania Hospital," Dr. Robert G. Le Conte, Philadelphia. Discussion by Drs. E. H. Nichols, James S. Stone, Channing C. Simmons and others. The subject will be illustrated by lantern slides and patients. Light refreshments after the meeting.

DAVID CHEEVER,
HORACE BINNEY,
GEORGE S. C. BADGER,
*Committee on Medical and Social Meetings for the Boston Medical Library.*

THE BOSTON CITY HOSPITAL ALUMNI ASSOCIATION. — The Association will hold its annual meeting on Wednesday, Feb. 15, 1911. Medical and surgical cases will be shown in the amphitheatre of the hospital between 11 and 1 o'clock. The trustees invite the members of the Association to luncheon in the hospital library at 1 o'clock. The annual business meeting will be held at the Hotel Vendome, corner of Commonwealth Avenue and Dartmouth Street, at 6.30 o'clock. Dinner will be served at 7 o'clock. Dr. George T. Tuttle will preside. Tickets, at $2.00 each, may be obtained from the treasurer just before the dinner. The following invited guests have accepted: Dr. Charles W. Eliot, Hon. Herbert Parker, Mr. A. Shuman, Mr. William G. Shillaber and Dr. Francis B. Harrington.

WILLIAM H. ROBEY, JR., M.D.,
202 Commonwealth Avenue, Boston. *Secretary.*

### RECENT DEATHS.

TROW, CORNELIUS GILMAN, M.D., M.M.S.S., died in Sunderland, Mass., Oct. 7, 1910, aged sixty-three years.

FREDERICK COGGESHALL, M.D., M.M.S.S., died in Boston, Feb. 1, at the age of fifty.

DR. BENJAMIN VARNUM HOW, who died last week in Boston, was born at Lowell, Mass. Later he lived in Cambridge, Mass., and in 1876 graduated from the Boston Dental College. Instead of practising dentistry, however, he became an optician. His widow survives him.

DR. DANIEL A. CASELLA, of New York, died on Jan. 30 in the Gouverneur Hospital from the effects of a pistol shot, whether inflicted by himself or another has not yet been determined. In addition to practising medicine Dr. Casella was the manager of several drug stores on the lower East Side, and it was at one of these that the shooting occurred. He was graduated from the medical department of the University of the City of New York in 1890.

DR. CHARLES EDWIN WOOD, of Brooklyn, N. Y., died in the Brooklyn Hospital from cardiac disease on Feb. 1. He was graduated from the medical department of the University of Michigan in 1907 and for a time was in the United States Marine-Hospital Service. This position he resigned a year ago to accept that of physician to the Brooklyn Rapid Transit Employees' Benefit Association.

DR. WALTER H. SNOW, of New Lebanon, Columbia County, N. Y., died from Bright's disease on Jan. 27. He was born at Athol, Mass., on Dec. 27, 1859, and was graduated from the medical department of the University of the City of New York in 1881.

DR. HUGH CAMPBELL HENDRY, of Newark, N. J., died on Jan. 28, from cardiac disease. He was born in Glasgow, Scotland, in 1849, and was graduated from Bellevue Hospital Medical College, New York, in 1872. For a time he was surgeon to the Newark police department.

DR. STANLEY DOUGLAS CURRAN, of New York, who had been in ill health for some time, committed suicide by shooting on Feb. 4, while in a fit of despondency. He was forty years of age, and was graduated from Bellevue Hospital Medical College in 1896. At the time of his death he was physician to the University and Bellevue Clinic and to the Harlem Dispensary.

JOHNS HOPKINS HOSPITAL LIBRARY



## Original Articles.

# THE AIMS AND POSSIBILITIES OF NEUROLOGICAL HOSPITALS.*

BY PEARCE BAILEY, M.D.,

*Physician to the Neurological Institute of New York.*

A DISTINCT change has come over the study of neurology. Fifteen or twenty years ago, the neurologist was occupied chiefly with anatomical studies and their clinical expressions. Aided by the pathological anatomist, he confirmed the localization of lesions, determined tracts and was concerned largely with the organic nervous diseases. Now there is an anatomic branch of neurology, as much as there ever was; we still have to localize tumors and recognize anatomical lesions, but the scope of this so-called specialty has spread far beyond these narrow boundaries. To-day the sphere of the neurologist who fulfills his obligations is that of the counselor in the widest sense. He must first of all be a physician. After that, he must know enough of psychological technic to apply it and deduce results; he must be chemist enough to understand when chemical reports are indicated, and be able to interpret their meaning; he must be sufficiently conversant with the detailed application of physical remedies — exercise, baths, electricity, occupations, climate etc. — to prescribe them when necessary; he must also be a teacher in spite of the fact that the facilities for bedside teaching in neurology in this country are most inadequate; and, in addition to all this, he must be man of the world enough to recognize and appreciate the temptations, the trials, the frailties and the possibilities of the unstable class of patients who consult him.

The position of philosopher and friend has been more or less forced upon him by the dying interest in religion and by the example of physicians in other lines, who have been too much occupied with contending with physical diseases to pay much attention to the possibility or extent to which the results of psychic and physical therapeutics might be enhanced if more attention were paid to them.

Everywhere in medicine and surgery may be seen a lack of effort to repress the unnecessary material idea. A telling example of this may be found in the sanatoria for tuberculosis. Here the introduction of proper physical exercises, rest, fresh air, etc., has worked miracles; but their value would be still greater if more attention were given to some simple rules in psychology. In many of these sanatoria, little effort, apparently, is made so suppress the painful paraphernalia surrounding the great white plague. The patients sit on the porches, take their own temperatures, and discuss their symptoms; their concentration on disease and lack of systematic occupation militates against the success of any method of treatment. I recall one woman with tuberculosis who was an excellent illustration of this fact; both of her lungs were affected and she went to a sanatorium, where she kept track of her own temperature and discussed her symptoms to such an extent that she finally became a hypochondriac on tuberculosis and was sent to New York for treatment. Here her thermometer was thrown away, no further examinations of the lungs or sputum were made, and under a purely neurological régime she gained in weight and appetite, the fever left her, and she has now (three years after) apparently entirely recovered. Her lungs have not been examined, but why should they be?

To meet the task set before him, the neurologist must have for the field of his activities some central workshop where he can study his patients, communicate freely with those who work with him, carry out his experiments and impart to others his methods of work and the results of his experience.

It was with these ideas in view that a year ago we followed the lines of all modern concentration of effort and endeavored to establish a center of neurological activity. It seemed only fitting that we should have in New York an institution of this kind; there are many varieties of laboratories of research; there are hospitals given up to surgery, and there are other hospitals, well-equipped, devoted to almost every branch of medicine, but there has not been and there is not yet a neurological center with the equipment and of the importance that the subject merits. Perhaps the National Hospital in London comes closest to this idea, and the work it has done can be found in the biographies of the great men who have been connected with it, and in the history of modern neurology, but even there are not realized the full possibilities of a neurological establishment. I will, therefore, attempt to outline what our views are as to what such an institution should be.

In the first place, let us consider the financial aspect. The word "hospital" is derived from the Latin *hospes*, a guest, and the general idea at first was that hospital patients should be treated free. But with the distribution of wealth and possibilities, this idea has become archaic, so that now free treatment should be avoided whenever possible. This is especially true with nervous patients, upon whom the effect of *quid pro quo* stimulates self-reliance and hastens convalescence. It has been the rule with us that ward patients should pay when they can; they may not be able to pay the full rates, in which case they can be graded down, and only about one third or one fourth of our ward patients have been treated free. Under this plan, they make fewer complaints and are better satisfied, thinking that they are receiving their money's worth more than they would as free patients.

I think every hospital of this kind should have private rooms for patients who can pay as much or more than they would be charged in hotels. These patients, besides materially aiding in maintenance, are usually possessed of more than ordinary intelligence, and are likely to become interested in the work of the institution and to disseminate a knowledge of what is being done

* Read before the "Doctors' Club," Jan. 17, 1911.

there, and they may, eventually, on account of the latter, make a substantial gift to the hospital. The exact character of such an organization will depend largely upon the size of the community in which it is. The most desirable is an individual plant with an equipment all of its own, which may or may not be part of a general hospital, where laboratories, wards, private rooms and dispensary, can all be gathered together and all controlled under a single staff and management. This is only possible in large cities, but if well-planned and economically administered, such an institution in a large city may be run without a too great disparity between its budget and its income. The most certain income will be found to accrue from the private rooms of moderate price ($25 to $30 a week) in which persons with incurable disease can be made comfortable for any definite period of time. In rooms of this character, no physician's fees should be charged. In smaller communities, it may be found impracticable to run a separate institution. Under these circumstances, a neurological ward may be equipped in connection with some general hospital. There may be some struggle at first to secure the co-operation of the existing medical board of the hospital in agreeing that all neurological cases, medical and surgical, shall be sent to the neurological ward.

Such an agreement, however, should be reached before the plan is put into operation, and the equipment of the ward in the way of apparatus, house staff and a head nurse or a superintendent of nurses must be individual. The individual personnel seems imperative. The house officer should not be connected with the general service of the hospital. To do his work properly, one man cannot care for over ten or fifteen patients in an acute service, and although it may not be necessary for his term of service to be over a year, while he is on neurological duty he should have no other. There should also be a competent and well-trained woman on a good salary in charge of the nursing of this ward. The nurses under her may serve for periods of from three to six months, but while serving in the neurological ward they also should not have duties elsewhere. It is only by this constant application and association that they may learn the point of view and the routine essential in the treatment of nervous diseases.

An institution of this kind should be divided into a city plant and a country plant. The former should be in the nature of a reception hospital for the purposes of diagnosis, surgical treatment, for the treatment of cases that are likely to be of short duration and for the care of patients with wrong ideas about their health, who should be kept long enough to counteract improper psychical influences and erroneous theories on physiology.

The country plant or sanatorium should be fitted up for the care of chronic and charity cases and those not suitable for the city plant. This includes those who are crippled and those for whom outdoor life and occupations are indicated. The mental cases must be provided for chiefly in the country, partly for economy and also because the Lunacy Commission refuses to license an institution for the care of these patients in the city unless it has sufficient grounds surrounding it. The country institution for the insane may be made a substantial source of income.

The city branch, as an ideal institution, should also have some provision by which, perhaps with the co-operation of the state, the class of children who ultimately develop criminal tendencies could be taught how to live in the open and how to occupy themselves outdoors.

When the Neurological Institute was opened, I thought the necessary surgical work could be done at some of the other hospitals, but during the past year we have had occasion to do nine primary craniectomies and thirteen primary laminectomies, besides numerous other operations, and I am now convinced that our surgical department is one of the most important of the city plant.

The equipment of the hospital, particularly that of the city plant, should include all the necessary physical appliances for exercising, the Fraenkel movements, electricity, hydrotherapy, hot-air, occupation, etc., and these should be very complete.

For the purpose of concentration of work, these adjuncts must be directly connected with the hospital, and by this means, also, physicians gain an intimate knowledge of therapeutic procedures, regularity of treatment is enforced, and the means for the collection of valuable data is afforded. Thus, we may eventually be able to determine whether the benefits apparent from such therapeutic measures are simply those of suggestion or have a distinct physiological basis. These various appliances, as well as a careful record of the pulse blood-pressure reactions before and after them, even if they do no direct good, give the nervous patient something to think about, to put his teeth into and occupy his mind. It convinces him that he is there for some purpose. He has less time to think about his own troubles, is kept busy, and even if they serve no other purpose, these various mechanical contrivances are of service in that respect.

Broadly speaking, the most important purpose of the city plant of a neurological hospital is that of diagnosis. In such an institution, one is no longer forced to venture an immediate diagnosis. The more one sees of neurological cases, the more one sees how impossible it is to make a satisfactory diagnosis and arrive at a rational plan of treatment without prolonged observation, and we now seldom endeavor to make a diagnosis in less than three days, or even a week, or longer.

The laboratory connected with an institution of this kind should be a clinical laboratory, of course, and it is apt to be a very busy place, as constant demands are made upon it for the examination of urine, blood, feces, serum, etc., in relation to conditions of disturbed metabolism. In addition to this, there should be an experimental laboratory. So far as I know, there is no place in New York where neurologists can make

satisfactory experiments in their particular lines of work, and this country generally is deficient in that regard. As an illustration of the value of experimental work in neurology, I might cite the case of Dr. Harvey Cushing, of Baltimore, who is himself a surgeon, but who has made more impress in this country upon the surgical treatment of diseases of the brain than any man of our time. He has succeeded in doing this because he has been able to secure for his own use a surgical service connected with an experimental laboratory.

The educational advantages of a neurological institute should be very great. The atmosphere surrounding such a neurological center, and the opportunity for discussion, stimulates to new effort, and makes for a spirit of exactitude, and does away with the slipshod methods that are apt to creep into our work. It affords very favorable opportunities for clinical meetings, during which patients in the hospitals, with their complete histories, can be presented and discussed.

At one of the recent weekly conferences at the New York Neurological Institute, there were presented four cases which had been operated upon for spastic conditions in the new operation of section of the posterior spinal nerve roots. It would have been impossible to have collected so many instances of the advantages and disadvantages of this operation except in connection with a neurological hospital, and the lessons we learned from this exhibit should prove extremely useful to all of us and to our patients.

Also, in a central plant of this kind, one is able to obtain skilled help in difficult cases, and in no instance is an operation recommended until every phase of the case has been carefully considered by several competent men.

The education of assistants proceeds rapidly and thoroughly in an institution such as I describe. They see the patients, not only in the outdoor department, but in the wards of the hospital; they get the results of the laboratory findings; they see the patients operated on; they have an opportunity to follow their subsequent career. The assistant, in other words, gets the same training that the house physician of a general hospital gets during his term of service, together with the constant association with older men.

Throughout the country, one hears complaints of the lack of well-trained recruits coming to fill the neurological ranks, and we feel that it is necessary for a very radical change to come over the facilities offered students for studying nervous diseases if American neurology is to maintain the standard it now has.

An institution of this kind should attract medical students, especially post-graduates, from different parts of the country, and if it is properly equipped and conducted it will no longer be necessary for American students to go to Europe for special training in neurology. It also provides a valuable training school for nurses in this branch of medicine. A good nurse in neurology is just as important as a good nurse in surgery. She must learn not only to absolutely abandon all bedside gossip, to avoid mention of anything which may frighten or disconcert her patients, to be cheerful, optimistic and resourceful, to be observant of special symptoms which often enough a physician can never observe himself, e. g., Jacksonian epilepsy, and, furthermore, to carry out orders with the military precision which is at the basis of all neurological therapeutics. As it is, we have no specially trained nurses in this branch outside of those in the state hospitals. Possibly these nurses would not need as complete a technical equipment as those who are intended for general work, but they should receive some special education in nervous diseases, partly for what they are to do, but especially for what they are *not* to do, for the blundering of tactless nurses is not the least of the neurologist's troubles.

The last point I wish to mention in connection with this subject is the one that has puzzled me the most, and it is this, — that neurologists should concentrate their efforts to take a more active part in the civic life of the community, which they can only do through perfected organization. Largely through the efforts of Dr. Richard Cabot, the necessity of a social service department in every medical clinic has passed the stage of argument, is accepted as the most effective form of modern medical treatment, and, it is needless to say, no neurological institute is fully equipped without such an accessory. But in addition to what such an institute may do for individuals, by means of social service work, it had a wide future in fostering preventive measures. The health officials send their nurses through the tenements to ferret out cases of tuberculosis and instruct the people how to prevent it; the ophthalmologists have succeeded in securing legislation to prevent the occurrence of ophthalmia neonatorum and check the spread of trachoma; but thus far, the neurologist has been strangely silent in suggestions as to how to cope with the unstable character in childhood, and in co-operating with others in the prevention of crime and alcoholism. Among the inmates of the Elmira Reformatory it has been found that nearly 85% are so feebleminded that they are incapable of learning a trade. Such cases should pass through a neurological institute. Let these children be recognized and provided for before they reach the criminal age; let us find some means of sending them to the country early, where they could be taught to lead useful lives, instead of filling up our prisons and reformatories. This question of social service should receive more serious attention from a neurological point of view than has hitherto been accorded to it.

In concluding, I refer briefly to the work of the Neurological Institute during the past year. From Dec. 1, 1909, to Dec. 1, 1910, the number of patients treated in the hospital was 839. In the dispensary we have treated 3,136 new patients, and the visits of these patients numbered 13,198. Of those who received special treatment, hydrotherapy, mechanical treatment, etc., the highest number in one month was 1,200.

# THE NEW NEUROLOGICAL SERVICE AT THE BOSTON CITY HOSPITAL: ITS FIRST YEAR'S WORK.

BY PHILIP COOMBS KNAPP, A.M., M.D.,

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IN May, 1909, the trustees of the Boston City Hospital voted to establish special services in the wards of the hospital for diseases of the nervous system and diseases of the skin. Twenty beds were assigned to the neurological service and six to the dermatological. The two services have house officers in common, who serve four months in the out-patient department and eight months in the wards, the junior house physician taking charge of the dermatological cases. On the 15th of July, 1909, the first patient was admitted to the neurological service. A brief consideration of the work of that service during its first year may be of some interest and may also give some facts bearing upon certain questions now under discussion.

Three hundred and eighty-three patients were admitted to the service during the year. Of these, 158 were suffering from some form of disease of the brain, — 110 of them from some vascular lesion, hemorrhage, thrombosis, embolism or arteriosclerosis, 11 from meningitis, 10 from edema of the brain, 9 from syphilis and 7 from tumor; 40 had some disease of the spinal cord, — 14 tabes, 7 poliomyelitis, 4 myelitis and 4 tumor; 24 had disease of the peripheral nerves, — 19 of them being cases of neuritis; 53 had some neurosis, — 20 hysteria, 12 epilepsy, 10 chorea, 3 neurasthenia and 1 psychasthenia; 39 were alcoholic cases; 21 were cases of mental disease, — 7 senile dementia, 5 dementia precox, 4 general paralysis and 4 maniacal excitement; 48 cases were of various non-nervous affections.

The mortality was heavy, owing to the large number of cases of apoplexy, brought in often in a moribund condition. There were 110 deaths. Fifty-eight died of some vascular lesion of the brain, 8 from meningitis, 10 from edema of the brain and 2 each from syphilis and tumor, — a total of 80 deaths from cerebral disease. Of the other deaths, 6 were from some form of spinal cord disease, 2 from neuritis, 2 from chorea, 1 each from epilepsy and exophthalmic goitre, 3 from alcoholism and 1 each from dementia precox, general paralysis and maniacal excitement. Thirteen cases died of some non-nervous disorder. Thirty-seven autopsies were obtained, 19 of which were medico-legal.

In a recent article pleading for the establishment of neurological hospitals and neurological wards in general hospitals, Collins and Bailey [1] say that "in all America there is scarcely a general hospital with neurologic (*sic*) wards worthy of the name." With their plea for a better recognition of neurology and with their condemnation of the internist for his wilful neglect of the subject, I would absolutely agree, but there has been at the City Hospital in Boston for over a year this service for diseases of the nervous system which, combined as it is with the out-patient department, which treats seven or eight hundred cases annually, affords at last in Boston a proper opportunity for neurological work and for the training of students interested in neurology. The old service for nervous diseases at the hospital, which existed from 1877 to 1886, did much for neurology in this country in the early days, and its abolition, for which no defense can be made, was a serious blow to scientific progress in medicine. The restoration of that service, combined as it is with a large out-patient clinic, promises much for the future. The patient suffering from nervous disease who enters the hospital to-day can now receive the special care and treatment of which he has been so long deprived, but to which, in a city institution, he is as much entitled as the patient with uterine or ocular disease. The student wishing to make special study of neurology now has an opportunity for hospital work in that special branch of medicine; and the neurologists on the staff of the hospital at last have the opportunity for proper study of neurological cases, of which they have so long been unjustly deprived.

The actual work of the service during this first year has brought out some rather interesting facts. The first item of interest is the remarkably small proportion of cases suffering from the various neuroses, — less than one seventh of the total number admitted. A number of these, many of the epileptic and hysterical cases, came in rather as emergency cases. Only three cases of neurasthenia and one of psychasthenia are recorded. In the out-patient department, however, the neuroses make a very large proportion of the total number treated, — usually over one third. These facts are of some significance in view of the recent plea that the state should establish a hospital for cases of "nervous breakdown." The vast majority of such cases as have presented themselves at the hospital during this year have been able to receive treatment as out-patients and have not seemed to require treatment in the wards of the hospital. I must confess that it has been a surprise to me, during my own service, to find how few neurasthenic patients were admitted to the service, for I had expected that they would form as large a proportion of the cases in the wards as they did in the out-patient department. It is, of course, somewhat premature to draw conclusions from the statistics of a single year, but very many cases of neurasthenia and psychasthenia do better if they can be in the world and can do certain work therein under wise counsel than they would do within the walls and under the deadening routine of an institution.

The second interesting feature of the new service is its relation to the psychopathic cases and the psychopathic hospitals. The statistics given above do not show this adequately. There were 31 cases diagnosticated as "alcoholism," which were cases of delirium tremens, alcoholic hallucinosis or alcoholic confusion, and 21 cases of the different forms of actual mental disease,

[1] Jour. Am. Med. Asso., vol. lv, 393, July 30, 1910.

paresis, dementia precox, etc. Many of the 19 cases of neuritis had Korsakow's psychosis; the 10 cases of "edema of the brain" (usually a post-mortem diagnosis) were for the most part alcoholic cases with "wet brains," presenting various mental disturbances. Some of the hysterical and epileptic cases, also, had marked mental disturbances, and various other cases were more or less delirious. On the whole it is a safe statement to say that over 100 patients presented, during at least a part of their stay in the hospital, some form of mental disturbance. This disturbance was often transitory, and comparatively few of them were finally committed to a hospital for the insane, but the hospital has cared for a very considerable number of patients in this service for whom a "psychopathic hospital" is urged, and, with a further development of the service, it can care for still more, and must necessarily care for many cases, even after the "psychopathic hospital" is opened.

That the new service has many problems to meet in the future, in the way of administrative detail, and that it needs further development along certain lines, is obvious; it is my object at present merely to indicate what has been done in this first year and to show what opportunities the Boston City Hospital now affords for neurological study and teaching.

## THE YOUTHFUL PSYCHOPATH.*

BY J. W. COURTNEY, M.D., BOSTON.

THE purpose of this very brief communication is to stimulate interest in a subject which I believe to be quite as important to the pediatrist as it is to the neurologist. Theoretical considerations I shall endeavor to avoid, for I know you will heartily agree with the statement that we are already surfeited with theories which mark the record for altitude in flights of psychologic fancy.

In textbooks and other writings on the subject of certain psychoses — notably paranoia and dementia precox — and certain psychoneuroses, clinically designated as hysteria and psychasthenia, the statement is frequently made that these disorders are due to factors which become active between the ages of puberty and maturity, and that their outbreak generally takes place between these two periods.

In my opinion this statement is both erroneous and misleading. It is true, to be sure, that the disorders mentioned frequently do not reach their maximum intensity until some time between the ages of sixteen and thirty. But to you who are constantly observing the ailments of infants and young children, it must be a matter of observed fact that unmistakable evidence of the existence of these disorders is very often present at a tender age.

As to causation, I believe you will agree that in practically all cases presenting this early evidence the hereditary origin of the trouble may be readily established. Indeed, actual statistics show that at least 75% of the cases representing these adynamic types of nervous and mental disturbance come from families in which mental alienation in some form or other has appeared in more than one generation. It is also an established fact that ancestral alcoholism, tuberculosis and syphilis must be given a prominent place in pathogenesis. Furthermore, it is often found that the father or the mother of the psychasthenic or the hysteric is afflicted with the same trouble and that the patient is apt to bear a strong physical resemblance to the afflicted parent. Finally, it may be stated that even in cases where the immediate forbears have no actual nervous disorder, they nevertheless often present such stigmata of mental and physical insufficiency as timidity, lack of balance and sound judgment, indecision and morbid emotionalism.

From my own personal experience and observation I am convinced that psychasthenia, hysteria, paranoia and dementia precox are identical in pathology and that in the overwhelming majority of cases they are hereditary in origin and slow in evolution. I am furthermore convinced that unequivocal clinical signs of their presence are always observable as early as the fifth year of life — in certain cases even earlier; and it is to the victims of these manifestations that I have applied the not altogether satisfactory term — "youthful psychopath."

Assuming that my convictions are well-founded, of what importance are they to the pediatrist? They are of paramount importance, because he is far more apt than either the neurologist or the alienist to come in contact with the afflicted child when the disorder is in its inception or but slightly advanced.

Those of you who are skeptical with regard to the value of neurological therapeutics may ask yourselves what practical results the writer of this paper expects to follow an early recognition of the disorder.

To such my answer is that early recognition offers opportunities for achievement along the lines of prophylaxis and treatment quite as signal and brilliant as any obtained in the combat with tuberculosis.

I venture this assertion because pathology fails to reveal to us that the condition underlying the disorders in question is other than an adynamic one, and with such a condition, even though it be of hereditary origin, we have every reason to hope for a successful struggle.

Before we can put into action our prophylactic and therapeutic forces, however, we must be sure that we thoroughly understand the youthful psychopath mentally, morally, emotionally and physically.

There is nothing absolutely distinctive about the bodily habit of such a child, although it is very apt to have a slender musculature, a narrow chest, scaphoid scapulæ, drooping shoulders and a vascular hypotonicity, with the vasomotor ataxia which so commonly accompanies this last-mentioned condition.

In a certain percentage of cases there is a differ-

* Read at the twelfth meeting of the New England Pediatric Society, held in Sprague Hall, Boston Medical Library, Nov. 26, 1910.

ence in the size of the pupils, most noticeable when the eyes are turned away from the light. The pupils are, nevertheless, always regular in outline, the response to tests of light and distance is prompt and alike in both eyes, and concentric limitation of the field of vision is invariably absent. The remaining sensorial, as well as the sensory, stigmata are also lacking.

Owing to the vasomotor irritability the susceptibility to atmospheric conditions is very marked. If the child happens to be outdoors when the weather is at all cold, its extremities quickly become mottled and painfully cold and numb. If it chances to go indoors while in this condition, the heat of the house very soon causes a change from vasoconstriction to vasodilatation, with the result that the ears, cheeks, hands and feet tingle and grow uncomfortably hot and red.

In many cases the enthusiasm for childish games of the outdoor sort is not in the least abated. On the contrary, they are entered into with intensity and vehemence, but the emotional reaction is so marked that appetite is abolished and sleep is disturbed by vivid dreams. So slight, in fact, is such a child's power of inhibition that after a hard day's play it will toss and tumble about the bed all through the night, grind its teeth, cry out aloud or from time to time mumble disjointed phrases.

In other cases a distinctly anti-social tendency is early exhibited. Where this exists, the child has no desire for outdoor play with other children, but prefers to remain at home with a parent or nurse. Both these types exhibit marked propensities to sleep-walking and similar automatic acts, and also to night-terror and bed-wetting. Furthermore, in both types, again, the eruption a tooth or the onset of even a mild attack of one of the exanthemata is very apt to be ushered in by convulsions.

Intellectually the psychopathic child is, as a rule, precocious to a marked degree, but unfortunately its intellectual nature is so completely overwhelmed by its emotions that, both in school and company, really dull children of its own age appear actually brilliant by comparison.

I should like to make manifest to you the full extent to which the morbid emotionalism of this child overshadows its intellectuality, shapes its character and compels its thoughts and actions, but I confess that my powers of expression are entirely inadequate to perform such a task satisfactorily. However, the facts, although stated in a clumsy and roundabout fashion, are about as follows: One of the most powerful of the elemental human emotions is fear. In proof of this one has merely to observe the expression of this emotion in the newborn infant. No experience hypothesis in explanation of this phenomenon is tenable. Clearly, the fear-emotion is a heritage transmitted by countless generations, and a child comes into the world with it as firmly embedded in the meshes of his brain cells as the deciduous teeth are in the gums. This is true of even the most normal child, but is infinitely truer of the adynamic. Weakness and fear go hand in hand, and in the youthful psychopath fear is the emotion that dominates all cerebral activity.

If we bear this fact in mind, many of the phenomena exhibited by it become readily intelligible. Fear, like the other emotions, has a very definite form of physical expression, such as pallor, cries, palpitation of the heart, muscular trembling and relaxation of the sphincters. With these are often associated some voluntary or semi-voluntary movements of a muscle or group of muscles which evidence an attempt on the part of the affrighted individual to escape from a terrifying object or situation. In the youthful psychopath certain of these semi-voluntary defense movements are habitual and constitute the *tics* with which your clinical experience has familiarized you. The other phenomena are not habitual, but are frequently occasioned, to some degree at least, by various agents which tend to bring the fear-emotion to a crisis. These agents are many in number, but the most common are such natural phenomena as thunder and lightning, the noise of fire-arms, high places, crowded or solitary localities and so forth.

The effect of fear upon the child's habit of thought is very striking. The necessary brevity of this paper renders a detailed description of this peculiarity impossible. Suffice it to say that every occurrence that comes to the child's attention and every chance remark that is made within its hearing is seized upon and invested with a personal significance that is always sinister. A single example will illustrate this point. A psychopathic child of six years now under my observation recently heard her father say that in his belief a war between this country and Japan was bound to come. At the time there was no reason to suppose that she had paid any particular attention to what was said, but a few days later, while she was in a down-town store with her mother, she saw two Japanese, and immediately seized her mother's skirts with every evidence of terror. In surprise the mother questioned her closely as to the cause of her fear, and the interrogation finally brought out the fact that the child was convinced that war with Japan had begun and that her life was imperilled by the presence of the Japanese in the store.

The effect of fear upon character formation is equally striking and interesting. In the company of normal children or of adults not of its family, the youthful psychopath is shy and diffident to a marked degree. If its over-exalted sensibilities chance to be wounded by a child of its own age, it invariably has recourse to tears rather than to retaliation. When it is spoken to by grown-ups who are strangers to it, it changes color and stammers out a reply. And when, under observation of which it is conscious, it attempts some performance that calls for nice muscular adjustment, its power of co-ordination is so crippled that the result is a dismal failure.

In the home, on the other hand, this same child is self-willed and domineering. It brooks neither reprimand nor repression, and the slightest contrariety, from no matter what source, calls

forth an emotional outburst which, in all essential details, corresponds to an hysterical convulsion.

Other striking peculiarities of character are also frequently exhibited. There is no gainsaying the fact that even the most normal child is possessed of a transitory criminality. We are all aware that such a child will lie and steal; that he may be unmoral and without affection; and that he may be cruel to the feeble and to animals. But in the youthful psychopath, owing to its very limited powers of inhibition, these traits are vastly more accentuated, and tend to permanency. In this same child you have the habitual nail-biter and the precocious masturbator, for which peculiarities I have at this time no special explanation to offer.

Permit me to lay emphasis on the fact that all these abnormal characteristics — mental, moral and physical — which mark what I have somewhat inaptly termed the "youthful psychopath," may be brought to light by careful observation and persistent investigation, in subjects between the ages of five and ten years.

Once they are brought to light we may determine by their grouping in a given case whether we are dealing with hysteria or psychasthenia, paranoia or dementia precox; and by their intensity and fixity whether the disorder is merely nascent or in full process of evolution.

All four of these clinical forms present certain features in common, but each is marked by peculiarities that are sufficiently distinctive. In psychasthenia the fear-emotion colors all the mental operations to a certain degree, but the counterbalance of judgment is never lost, so that obsessive ideas are not transformed into delusions; and morbid impulses seldom become overmastering. In paranoia the obsessing ideas tend early to become systematized and to focus upon the subject of the sufferer's personal safety and liberty. Fears which the psychasthenic experiences only in certain places and at certain times, and which lead merely to obsessive ideation, are experienced by the paranoiac at all times and in all places. And instead of obsessions, actual delusions of being followed and persecuted, after a time, completely govern the victim's reaction to his environment.

Dementia precox is to be feared where the powers of inhibition remain markedly weak and the growth of the moral sense does not keep pace with growth in other directions. Here the predatory and animal instincts of the child occupy the foreground of the clinical picture, and we find it to be a shameless liar, a confirmed thief, a natural vagabond, a masturbator and the personification of cruelty.

In the youthful hysteric the obsessive and impulsive tendencies are by no means so marked and obvious as they are in the psychasthenic, the paranoiac and the precocious dement types. The morbid phenomena exhibited by this child are not constant but periodic, and are usually confined to somnambulism and other automatic acts, and to violent emotional outbursts accompanied by convulsive movements, which may be followed by temporary palsy and contracture of limbs or segments of limbs.

After we have determined that we are dealing with a potential or actual victim of some one of the four forms of disorder under consideration, what may we hope to accomplish by treatment? I have already expressed the belief that the underlying morbid condition is a simple adynamic one, but even in a simple adynamic condition of the nervous system we are confronted with a metabolic problem that is by no means easy of solution.

Nervous energy, like electricity, is practically unknowable in essence, and yet we are aware that it is, in part at least, a form of motion liberated from substances with which the body is sustained.

This fact turns our attention at once to the physical needs of the afflicted child. To you who have made such advances in the chemistry of juvenile dietetics, I shall not venture to particularize with regard to food selection. The practical demand is for a diet that offers the highest possible percentage of energy production and is at the same time small in bulk, easy of digestion and assimilation, and inconsiderable in waste.

With the diet problem settled, attention should be turned to faulty postural habits. These defects are best eradicated by participation, enforced if necessary, in outdoor games, which are supervised by a tactful nurse or parent. Regular gymnastic systems are entirely inadvisable because the monotonous repetition of any movement quickly wearies the child both mentally and physically.

When the physical system begins to show signs of increasing vigor, we may safely attempt to divert the child's mental activities into normal channels. This, for several reasons, is the most difficult part of the task. First, because it is oftentimes well-nigh impossible to gain the child's confidence sufficiently to enable one to bring its obsessive ideas to light; second, because the parents themselves are of flabby personality and cannot be made to understand the full significance of the child's condition; and lastly, because environing conditions in general are unfavorable. However, with tact and patience much may be accomplished.

No definite rules can be set down for this portion of the treatment, but the guiding principle should always be disciplinarian in character. The child should never be made to feel that it is any way abnormal and should never be segregated. On the contrary, the social instinct should be fostered and strengthened in every possible way, care being taken that the associations formed are with healthy children. The nipping in the bud of anti-social tendencies is of vital importance, for their persistence in fully developed psychasthenia is a source of the most poignant suffering, and in paranoia a menace to public safety.

The panphobic tendencies of the youthful psychopath must also be eradicated. In this task the personality of the individual in charge of the child counts for everything. Such a person must be fearless, self-repressed, sympathetic yet firm.

By such qualities the child's confidence is easily won, and it becomes communicative with regard to its fears. When these are known, it should be the aim of the person in charge to rid the child of them by persuasion and by personal example. Ideas of courage in every form should be implanted in the childish imagination and their growth fostered in all possible ways. Depressing tales of a supernatural and terrifying character should be sedulously kept from the child's ears. The threatened invocation of the police or of bogeys for the purpose of checking rebellious tendencies is to be characterized as little short of criminal.

The religious training is also a matter of prime importance and care should be taken to inculcate the notion that the Deity is not revengeful and constantly on the alert for the opportunity to consign His erring children to a material hell.

The importance of both these suggestions becomes manifest when we consider that some of the most distressing fears of the full-fledged psychasthenic center about hobgoblins, supernatural phenomena, the guardians of the law and the wrath of the Creator.

For the tics and for actual convulsive phenomena, the judicious use of sedatives is strongly to be recommended. But for many of the other phenomena exhibited — like stubbornness and temper — I recommend, in spite of the implied heresy, a good, sound spanking.

I am fully aware that I have not covered all the points that a subject such as I have chosen naturally raises. I trust, however, that whatever I have omitted will be fully taken care of in discussion.

In conclusion, permit me to state again my sincere belief that the morbid conditions under consideration are, to the observant, fully obvious at an early period of life and that, by proper treatment, their course may, in many cases, be arrested and many a mental wreck thereby averted.

## SOME CLINICO-PATHOLOGICAL DATA ON BLADDER TUMORS.*

BY LINCOLN DAVIS, M.D., BOSTON.

ABOUT four years ago I made a study of 41 cases of tumors of the bladder collected from the records of the Massachusetts General Hospital.[1] I should like to recapitulate now some of the points made in that analysis, and bring the figures up to date.

In only 28 of these 41 cases were microscopical examinations of the specimens recorded. Twenty-five belonged to the epithelial group, 2 were sarcomata, 1 was a myoma, showing a great preponderance of epithelial tumors. Seventeen of the specimens of epithelial tumors which had been preserved were personally studied; 6 of these showed satisfactory evidence of epithelial infiltration of the bladder wall and were classed as carcinomata; 11, or nearly two thirds, were regarded as papillomata.

A total of 37 cases were operated upon, 9 resulting fatally within a month or while still in the hospital, giving an operative mortality of nearly 25%.

In none of the malignant cases was a radical operation, as it is now understood, attempted, but merely such palliative measures as curettage, cauterization and partial removal resorted to, with the result that death from the disease occurred in every case within six months.

Of the 28 patients who survived the operation, 26 were traced. Fourteen, or just 50%, died of the disease, 1 of these surviving for five years in spite of repeated recurrences before finally succumbing. Twelve patients, including those who died of other diseases, had no recurrence so far as could be learned. Nine are known to have survived the operation one year. Seven survived the operation two years. Five survived the operation eight years. Three of the latter died of other diseases, leaving 2 patients living and well at the time of the report, respectively eight and ten years after operation. Of the 5 patients who survived for eight years, in only 3 were there pathological reports on the specimens removed; 1 was a myoma, 2 were papillomata.

Of the 8 cases of papillomata in which the specimens were personally studied, 1 died as the direct result of the operation, 1 died of intercurrent disease eighteen months later without evidence of recurrence, 1 died two months after secondary operation for recurrence, 1 five years later of recurrence. One case reported perfect health one year after operation, not heard from since. One case cannot be traced; one case is well eight years after operation. One case operated on by Dr. A. T. Cabot in 1892 and again in 1897 for recurrence has remained well up to the present time, thirteen years since the second operation.

These figures indicate a considerable period of immunity, if not an ultimate cure, in a respectable proportion of cases of papillomata of the bladder after simple excision of the growth through a suprapubic cystotomy wound.

At the time of writing my former paper on this subject I had a personal operative experience of a single case; since then I have operated on 15 cases of bladder tumors.

Of these more recent cases, 9 were papillomata which showed no evidence of infiltration of the bladder wall as far as microscopical examination of the specimens permitted of determining this point. The tumors varied in size from a large pea to an orange, and in number from a solitary growth to a dozen or more. No recurrences have been reported as yet. Two patients are reported well respectively four and two and one-half years after operation. Four reported themselves as well one year after operation. One case operated on a year ago has not been traced; 2 cases are very recent.

In one case in which there was one large papilloma and five smaller ones, Dr. Whitney's report stated that there was a solid mass of epithelial cells apparently in the lymph spaces

* Read before the New England Branch of the American Urological Association, Nov. 29, 1910.

[1] Ann. Surg., April, 1906.

of the pedicle of the larger growth. The smaller ones appeared quite benign. This patient is now under treatment in the Out-Patient Department for mild cystitis; he has been cystoscoped several times and there is no recurrence. It is one year and six months since his operation.

Three cases were frankly cancer of the nodular, infiltrating kind; all recurred within a year. In only one was a radical transperitoneal operation performed with excision of the growth, and entire thickness of the underlying bladder wall. In the 2 other cases curettage and cauterization through a suprapubic incision was all that was attempted. Two cases were of quite unusual interest; one[2] which has been previously reported was of a pedunculated growth springing from the prostatic urethra and was found on section to be a papillary cystadenoma. The prostate was removed in this case and showed a similar condition. The growth, therefore, is not properly to be classed as a primary tumor of the bladder, as it was of undoubted prostatic origin. The other case, a recent one, was of a peculiar cystic growth, the size of an egg, which was attached close to the internal urethral orifice, though it did not seem to be a part of the prostate. Dr. Whitney has recently pronounced it to be a cystic growth of undoubted prostatic origin.

There was no operative mortality in these 15 cases. Transperitoneal cystotomy was done in 5 cases, and simple suprapubic cystotomy in 10.

My own experience and that of others with which I am familiar forces me to take a gloomy view of infiltrating cancer of the bladder, yet I believe that here as elsewhere in the body the only chance of success is early and total excision with a wide margin of healthy tissue. The proximity and frequent involvement of the ureters and the depth of the wound makes the operation a very formidable one.

Fortunately the cases of nodular infiltrating growths are in the minority. Our figures clearly indicate that the anatomically benign papillary epithelial tumors, whose existence was at one time denied, predominate in numbers over all other forms.

Albarran's much-quoted saying, "En clinique . . . toute tumeur vesicale est maligne ou peut le devenir," is nevertheless strikingly true. There can be little doubt but that any papillary tumor of the bladder, if left alone, will in time cause death either from hemorrhage, obstruction or infection.

In 2 unoperated cases of papillomata found at autopsy at the Massachusetts General Hospital, in which careful sections of the tumors and underlying bladder walls showed not the slightest evidence of malignancy, death resulted from uncontrollable hemorrhage from the bladder. (Autopsy No. 641 and No. 710.)

Examples of malignant degeneration of simple benign papillomata are not uncommon. A case in point reported in my former paper was operated on by Dr. A. T. Cabot at the Massachusetts General Hospital. A small pedunculated papillary tumor was excised from the bladder of a patient who had suffered from intermittent hematuria for three and one-half years. Examination of the specimen showed no evidence of infiltration of the base, the epithelium, except for numerous mitoses, being of quite typical arrangement. The patient was operated one year and six months later for recurrence; at this time the bladder was found filled with a cauliflower growth showing upon examination markedly atypical epithelium and definite infiltration of the base. Death resulted from the disease two months later. Similar cases have been reported by other observers.

Orth has observed near a large unmistakably cancerous papillary growth of the bladder, smaller papillary tumors in which nothing of a cancerous nature could be found. I have already mentioned a similar observation in a case of my own.

Clinical evidence likewise seems to support the theory of malignant transition of originally benign papillomata, for how else are cases to be explained, of which a number have been reported by Fenwick and others, where there have been symptoms of hematuria for twenty years or more, and at operation papillary tumors have been removed, showing but limited epithelial infiltration of their bases? It does not seem reasonable to suppose that such cases could have been malignant from the start, when symptoms have been so mild and the progress of the lesion so slow.

There is a very marked tendency for papillomata to recur. These growths often reappear not upon the original sites, but at other points on the bladder wall, springing up *de novo* as it seems, in response to a general predisposition to the disease which is unaffected by the removal of any one growth. As a rule, rapidly and repeatedly recurring tumors are malignant in the end, if not from the beginning. That every recurrent papillary growth is malignant is far from true, however. In this connection I may cite 2 cases.

In December, 1904, I operated on my first case, and a small benign papilloma was removed through a suprapubic incision and the base cauterized with the actual cautery. In February, 1906, the patient returned with hematuria. No recurrence in the bladder could be seen with the cystoscope; the prostate, however, was regarded with suspicion, and that mildly offending organ was removed by the suprapubic route. Four months later there was again hematuria, and the cystoscope showed the bladder studded everywhere with little papillomata. The case was at that time regarded as hopeless, but it took four terrible years for the patient to die. It was undoubtedly a mistake not to have operated on him again.

Another case was that of a lady fifty-five years old who had profuse hematuria. She had been examined with a cystoscope and told that she had an inoperable growth and that there was no help for her. She finally come into the hands of

[2] Harrington's operation of intraperitoneal cystotomy. Ann. Surg., December, 1908.

Dr. S. J. Mixter in a desperate condition from loss of blood. He did a suprapubic cystotomy and removed eight papillomata from the bladder. Microscopic examination did not show any evidence of infiltration. Four months later hematuria recurred; the cystoscope showed four small growths grouped about the scar of the previous excision. Dr. Mixter again operated by suprapubic cystotomy and removed these growths, which were reported as benign. Three months later the patient, though greatly improved in general condition, again reported hematuria, the cystoscope showed two small growths in the same location, with a suspicious area on the other side of the bladder. In Dr. Mixter's absence, I did the third suprapubic cystotomy, and removed the growths with the actual cautery, searing the suspected mucous membrane on the other side. Two years and six months have elapsed since then, and the patient has been cystoscoped several times, and appears to be in perfect health.

In the light of such experiences as these with papillomata of the bladder, it seems to me our course is clear before us. Until we learn the cause of these growths and can bring about its removal, we must continue to follow our cases relentlessly with the cystoscope, and operate and re-operate as the growths appear.

## THE TRANSPERITONEAL AND SUPRAPUBIC APPROACH TO TUMORS OF THE BLADDER.*

BY CHARLES L. SCUDDER, M.D.,
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THE most common form of the epithelial tumors of the bladder is the papilloma. In a certain series of 56 operated cases of tumor of the bladder from the Rochester, Minn., Clinic, 42 were of the papilloma type. This affords an idea of the frequency with which papilloma of the bladder is found at the operating table.

There are certain facts of importance which should be considered in deciding upon the operative attack on tumors of the bladder:

1. It is impossible for the pathologist to state with certainty whether or not any given papilloma is malignant without a careful examination of the whole growth, including a section of the bladder wall from which the growth arises.

2. It is even under these ideal conditions oftentimes impossible for the pathologist to determine whether or not a given papilloma is malignant.

3. Practically speaking, all tumors of the bladder cause the death of the patient sooner or later. The supposedly benign papilloma causes death by hemorrhage or pyelonephritis.

4. All so-called benign tumors are potentially malignant. A papilloma which shows no sign of malignancy may become malignant.

5. If the operative deaths and the rapid recurrences of bladder tumors are combined, as Watson has very properly combined them, under the one head of operative failures, these failures have occurred in 29% of the so-called benign tumors and in 46% of the cases of carcinoma.

6. Of the urethral operations for papilloma, only 28% remained cured more than one year.

Of the suprapubic operations, not resections, only 27.5% remained well more than one year.

Of the partial resections, 37.5% remained well more than one year.

7. Of 55 cases of papilloma operated upon through the urethra or suprapubically, or by partial resection, 19 had recurred.

8. The statistics of Nitse in 1901 and 1905 are not corroborated by detailed reports of the cases and consequently should be looked upon as unusually fortunate results.

In view of the above facts pointing to the very great malignancy of papilloma of the bladder, and because of the poor surgical results that hitherto have been obtained by operative treatment, I believe that we should regard, from an operative standpoint, all of the papillomata of the bladder as potentially malignant, and that they should be treated as if they were malignant growths, whether there are evidences of malignancy in any individual case or not.

The approach to the bladder tumor through the suprapubic incision affords, in a certain number of the cases, satisfactory access to the tumor. In a still smaller number of cases the suprapubic approach supplemented by a separation of the bladder from the peritoneum affords easy access to the tumor.

Most bladder tumors are seated at the base of the bladder and in the region of the ureteral openings. For such tumors and for those tumors evidently malignant, I believe that the approach should be by means of the transperitoneal operation of cystotomy. There are certain cases, too, occurring laterally and in the median portion of the bladder that will become more readily accessible through the transperitoneal approach.

The peritoneum is with greater and greater difficulty stripped from off the bladder as one approaches the posterior surface of the bladder low down. Consequently the extraperitoneal suprapubic route is impracticable in many cases. I believe that the transperitoneal approach to the bladder affords the safest means of removing bladder tumors.

The opening of the abdomen enables one to see and palpate the liver, to inspect the peritoneum, the mesentery and the retroperitoneal glands. It is of very great importance that these parts should be inspected before any radical operation is undertaken for the removal of a bladder growth. If metastases are discovered, as they have been several times, a radical operation would be of no use. A sufficient number of cases have not yet been operated upon by the transperitoneal route to establish the mortality percentage, or the percentage of cures and recurrences, but it will not be long before sufficient evidence has accumulated to reply to these inquiries.

The transperitoneal operation enables the surgeon to operate with comparative ease, bloodlessly, aseptically and consequently safely.

* Read before the New England Branch of the American Urological Association, Nov. 29, 1910.

The investigations of Tuffier, De Quervain, Barney and others have demonstrated that normal, sterile urine is not a great irritant to the peritoneum, so that under the very careful precautions taken at a transperitoneal operation there need be no soiling of the peritoneum and adjacent tissues with urine, and this chance of infection may be practically eliminated.

The more I have to do with cancer in any form, whether the supposedly mild squamous-celled epithelioma of the face, or the squamous epithelioma involving the jaw, the more I am impressed by the absolute necessity of a very thorough procedure to eradicate the disease at the outset beyond peradventure of a doubt.

It is far safer, it is far wiser, it is better surgery, to remove the contents of the orbit when the squamous-cell cancer involves the skin near the inner canthus in the immediate neighborhood of the eyeball, even though the eye be intact functionally, than to temporise with an excision of the apparent growth and be forced to a subsequent attack upon the orbital contents when the disease is too far advanced to accomplish more than a palliative operation.

I believe that the same principle holds true in these cases of papilloma of the bladder, *no matter how benign they may appear*. A primary radical excision with the whole thickness of the bladder wall is indicated in the most benign-appearing cases of bladder papilloma.

The improvement of the operating cystoscope, together with the high-frequency current, enables those so inclined to operate upon these growths, and fortunately, and in a way unfortunately, to successfully remove a few. The advent of the cystoscope has made certain the location of the bladder tumors. The employment of the cystoscope for operating purposes seems to me unsurgical in cases of bladder tumors.

It is by the peritoneal route that a safe and comparatively easy access is provided to the bladder.

Regarding the technic of transperitoneal cystotomy:

Rydygier, in 1888, suggested this route to the bladder.

Harrington, in 1893, and Mayo, in 1908, have stated the salient facts in the technic of this procedure. We are all interested in little details which may contribute to a perfecting of this technic. Each operator who undertakes this major but simple exposure of the bladder will modify his procedure according to individual preferences.

I believe that the use of urotropin two or three days previous to a contemplated transperitoneal cystotomy is wise. Preparation of the region of the operation should be as carefully done as for any abdominal section.

If it is known that a *cystitis* is present, the bladder should be thoroughly irrigated before the operation. Tennant, of Colorado, has demonstrated recently that an intraperitoneal cystotomy can be done with safety even in the presence of a severe cystitis. He reports two cases.

The high Trendelenburg position facilitates the operation immensely.

The *abdominal incision* should be an ample one so that the intestine can be displaced upward behind the omentum completely and with ease. The edges of the abdominal wound should be protected by several layers of sterile gauze. I like, personally, to use for this packing off of the intestine a long roll of gauze which is wet and wrung out of hot salt solution.

*If the tumor has been located* by the cystoscope in the upper portion of the bladder, the incision for opening the bladder may be placed so as to approximate to the tumor.

If the tumor is nearer the base of the bladder, then a median opening of the bladder posteriorly will be wise.

The operation may be begun extraperitoneally, suprapubically and, if more ready access to the bladder is needed, the transperitoneal method may be used.

*The urine* is sponged from the bladder as soon as it is opened and the bladder is kept practically dry by occasional gentle sponging. Great gentleness must be observed in handling the bladder. Trauma however slight may be a factor in the recurrence of bladder tumors. Some one has observed that the Trendelenburg position diminishes temporarily the flow of urine from the kidneys.

An excision of the tumor should include the bladder wall. This wound in the bladder wall may be closed by interrupted or continuous suture, or if the wound is not too extensive, the edges and base of the wound may be cauterized with the actual cautery. All hemorrhage should be stopped either through application of the actual cautery or by placing the proper sutures. The suture should be of either plain or chromic catgut.

If the tumor involves the ureteral orifice, this should be excised and the ureter reinserted into the bladder.

*Treatment of the bladder wound.* — The bladder wound may be closed by a continuous Connell stitch of chromic catgut through all the layers similar to the suture used in the closure of the stomach or of the intestine. Or if one chooses, the mucosa and the muscularis may be sutured separately. The peritoneum in either case is approximated separately over the line of the incision in the bladder by a continuous linen suture.

Personally I like to use in wounds of the stomach, intestine or bladder an occasional interrupted stitch to reinforce a continuous suture. I do not often care to trust to a continuous suture alone in suturing any viscus.

If the ureteral orifice is involved and that part of the bladder is resected, or if there appears to be some little oozing of blood, or if the prostate has been removed, it may be wise to permanently drain the bladder either by a suprapubic tube or by a catheter through the urethra. I have used a catheter with the exception of one case in which no drainage was used. I should prefer

to avoid the use of any instrument in the bladder unless it were indicated by one of the three conditions mentioned. Mayo and Judd have only rarely drained the bladder in their transperitoneal cases.

The abdominal wound is closed by layers. If there is a suspicion of any soiling of the wound of the abdominal wall, then a thin small rubber tissue drain had best be introduced between stitches down to the peritoneal layer of sutures.

In conclusion, with regard to the surgical treatment of tumors of the bladder, certain of the small apparently benign papillomata may be safely removed by the suprapubic method, but should be removed even with this approach by a good margin of excised, healthy tissue.

The transperitoneal approach to the bladder will enable the surgeon to successfully attack cases of malignant tumor of the bladder which, without this approach, might be forced to a more dangerous extraperitoneal cystectomy. Watson's proposed cystectomy and double nephrostomy should be employed only when a partial cystectomy done transperitoneally is inapplicable. The transperitoneal approach to the bladder will care for many cases that otherwise would have to be treated by Watson's method of cystectomy.

Transperitoneal cystotomy is a procedure that has come to stay. Its employment should lower the percentage of recurrences in tumors of the bladder of all grades of malignancy.

## PRESENT STATUS OF INTRAVESICAL OPERATIONS FOR TUMORS OF THE BLADDER.*

BY HORACE BINNEY, M.D., BOSTON.

A GLANCE through the medical literature of the last five or six years, bearing on the treatment of bladder tumors, points clearly to at least one fact, namely, that in Northern Europe the intravesical operation has met with increasing popularity. Whereas, at the beginning of the present decade, Nitze and one or two of his pupils seem to have been the only surgeons using this method, the reports in European journals, during the last year, come from at least a dozen surgeons.

In this country, Myer,[1] of San Francisco, and Kolischer and Schmidt,[2] of Chicago, are practically the only surgeons who published evidence of personal experience prior to 1908. Since then a few others have been employing the method, but no publications have appeared except the brief reports of Young,[3] of Baltimore, and Beer,[4] of New York. The increased popularity of the method in Europe, and the fact that in this community the method is employed practically never, seem sufficient reasons for our looking more closely into the question of these intravesical operations.

The development of the intravesical method of operating, which was largely due to Nitze's genius and industry, and the form of instrument used by him, are matters with which every one present is doubtless familiar. I shall, therefore, omit a detailed description of the Nitze instrument, but describe briefly the instruments of a different type which have been recently brought to our notice by other workers in this field. I shall also give a short résumé of the results of reported cases of intravesical operations, as far as known, and shall review the opinions expressed by the more important urological surgeons in the recent French and German urological congresses.

The majority of European intravesical operators and, as far as I know, of American, use the Nitze instrument in its typical form. The chief characteristic of it, namely, the rigidity of the beak supporting the galvanocaustic snare, has been thought a disadvantage by a number of operators, and, therefore, the flexible system, so-called, has arisen. The best known of the flexible system instruments are those of Blum [5] and Kneise.[6] The former has devised a mechanism with a cold wire snare which can be attached to a Nitze double catheterizing cystoscope. The Kneise apparatus is designed for use with Wossidlo's catheterizing cystoscope, and also provides for cauterizing, or injecting solutions into, the base of the tumor. The main feature of these instruments is the placing of the wire loop on the end of a hollow carrier which is introduced through the catheter channel, and can be advanced into the bladder as far as needed, and moved through a considerable arc. This greater freedom of motion than is obtained with the comparatively short and rigid beak of the Nitze allows the cystoscope to be held in one position so that the picture is not constantly shifting. This would appear a decided advantage and is claimed by the authors to greatly simplify the technic.

In contrast with this method, known as the indirect, is the one advocated chiefly by Luys,[7] of Paris, and Keersmæcker,[8] of Antwerp. Luys has developed an instrument resembling an endoscopic tube which is introduced with a beak-shaped obturator. He claims, for its advantages, first, that it is used with air as a medium, thereby avoiding the obscuring of the field with blood; second, that a better view of the tumor is obtained and the cauterization can be more exactly performed, being always in full view of the operator. Keersmæcker's instrument is much similar to Luys', but both of these instruments, having no snare mechanism, necessitate a comparatively large number of sittings for the treatment of anything but the smallest tumor or one with a very small pedicle. It can be easily seen that growths situated on the margin of the internal meatus cannot be reached by the indirect instruments, but must be attacked through a straight tube. Frank [9] reports a number of cases in which he has removed polyps at the bladder neck with an endoscope of his own design. He evidently does not employ it for papillomata within the bladder cavity, as done by Luys and Keersmæcker. While perhaps applicable to the female, it is hard to see how, in the comparatively rigid posterior urethra in the male, these instruments can have a very wide range of usefulness.

* Read before the New England Branch of the American Urological Association, Nov. 29, 1910.

In this country, Myer, of San Francisco, has described a method of operating on tumors in the female bladder. He devised a slender galvanocautery shaft which can be introduced by the side of an ordinary cystoscope and a tumor can be attacked in full view without the necessity of shifting the cystoscope. He claims this to be a simpler and quicker method than with the Nitze instrument, but limited, of course, to the female bladder.

In 1909, Young demonstrated, at the meeting of the American Urological Association, his operating cystoscope, which consists of a two-bladed rongeur through the shaft of which a small straight cystoscope is introduced. A tumor or foreign body, if within reach of its jaws, can be grasped and wholly or partially removed. He has used this in removing recurrent papillomata. Still more recently, a method of attacking tumors was published by Beer, of New York. His instrument consists of a flexible electrode which can be introduced through a catheterising cystoscope and a high-frequency or Oudin current applied to the tumor. Owing to the flexibility of the electrode, the scope of the instrument is large and the technic simple. He has used it in two cases, succeeding in checking hemorrhage and destroying the growth, but his operations are too recent to say whether or not a cure was obtained.

In considering the results of reported cases, we find that Nitze's exceed those of any other operator in number, but in his personal articles he did not prove convincingly that many cases in which he had successfully removed the tumor had been followed long enough to determine a cure. His pupil, Weinrich,[10] in 1905, reported on 170 cases operated by Nitze and himself. Fifty per cent of these cases showed, on cystoscopic examination three years after the removal, no recurrence. Twenty of Nitze's cases had recurred, or 11% of the whole number. There was one death, and in one case suprapubic cystotomy was performed for hemorrhage; result in the remaining cases not known. Other cases are reported by Suarez,[11] one in which two tumors were removed in five sittings; Weinrich,[12] 3 additional cases reported in 1906; Casper,[13] 65 cases with 16 recurrences, in 2 of which he was obliged to perform a suprapubic cystotomy for hemorrhage (he does not give the length of time since operation in cases that have been followed); Asch,[14] 2 cases, 1 of which had no recurrence seven years after operation, second one, operated eight years before by Nitze, in which recurrences appeared at various times, always benign. Boehme [14] reported 5 cases, four papillomata and one fibroma. In these, no recurrence had appeared at the time of publication, excepting one which, after a year, showed a general papillomatous degeneration. Kneise has performed twenty-five operations with his flexible operating attachment, but gives no account of results. Blum reports 4 cases of benign papilloma which he removed in from two to eight sittings. Ringleb [14] has performed twenty-one intravesical operations, once obliged to perform suprapubic cystotomy for hemorrhage, but gives no results. Operations performed by the direct method are few in number, but three reported by Keersmæcker and two by Luys. They claim to have entirely destroyed the tumors, but the period of observation is too short to be convincing of cure.

With the dearth of complete reports of the results of intravesical operations, it is difficult to form any definite opinion of their value, and the question must be still considered an open one, but it is of interest, perhaps, to review the opinions of those who have been most vigorously opposed to it, and to mention some of the advantages claimed by the advocates of the method.

Among the earliest opponents was Israel,[15] who did not believe the operation justifiable on account of the danger of hemorrhage on separation of the scar in the Nitze operations. Rovsing,[14] at the German Congress, in 1909, stated that, since even the smallest papilloma may be malignant, he considered it unwise to use a method which entailed any delay, but advocated the more radical and rapid method of suprapubic cystotomy for practically all cases. Von Frisch,[14] believing that at least 50% of papillomata are malignant, considers the intravesical operation unsafe and is, therefore, opposed to it. Zuckerkandl [14] and Kapsammer [14] are less conservative and advocate its use in very small papillomata which can be wholly removed in two or three sittings. In France, Cathelin,[16] Rafin and others have been opposed to it on the ground of technical difficulties and believe that the operation is less radical than suprapubic cystotomy. On the other hand, the following definite advantages are claimed for it by Weinrich, Casper, Luys, Blum and others: (1) Its mortality is practically nothing (Weinrich, 1 death in 150 cases as compared with 14% mortality from the suprapubic operation, which is the figure published by Von Frisch in his report on 300 cases). (2) The avoidance of complications such as fistula, sepsis, phlebitis or pneumonia, involving long convalescence. (3) The ability of the patient to continue at his work. (4) The more thorough inspection permitted, less danger of overlooking small beginning tumors than in the suprapubic method, in which the bladder is somewhat collapsed and the mucous membrane frequently covered with blood or other fluid. (5) (Important advantage.) The avoidance of danger of implanting tumor cells in other portions of the bladder or in the suprapubic wound which might lead to recurrence. (6) Its greater applicability for recurrent tumors after removal of larger growths by suprapubic cystotomy, it being naturally impossible to subject a patient to repeated operations of such gravity.

In weighing the evidence for and against, one is certainly influenced in favor of the intravesical method, at least in case of smaller growths, by the fact that the most careful and thorough suprapubic excision of small single papillomata is sometimes followed by the development of multiple recurrences, more or less approaching the so-called papillomatous degeneration. A number

of these cases, following suprapubic operation, have been reported by Casper, Lichtenstern,[17] Zuckerkandl and others, whereas this condition seems to develop less frequently after the intravesical operation, one case only being reported by Asch. As stated before, however, details are so scanty and after-results are lacking in the reports of so many operators that no definite opinion can be formed on this point.

The results of these reported intravesical operations, numbering something over 200 cases, may be summarized as follows: Mortality, one half of one per cent, or less, there being but one fatal case in the whole number; hemorrhage, severe enough to require control by suprapubic cystotomy in 3 cases; cure for at least three years has been established by cystoscopic examination in 50% of the cases reported by Weinrich. The exact per cent of cures cannot be figured at present, owing to the failure of the operators to confirm an apparent cure by cystoscope. For this same reason, the frequency of recurrence after the intravesical operation cannot be estimated from the reports. In the original statistics of Nitze, the recurrences are given as 18%, which is better than the figure stated by Rafin in his collected statistics of suprapubic operations, which was 26%.

Inasmuch as Nitze operated on tumors of all sizes, while the tendency at present seems to attack only the smaller benign growths, it is probable that there is a still greater difference in favor of the intravesical operation in per cent of recurrences.

In conclusion, we may say that the published results of intravesical operations do not at present warrant the adoption of the method for the removal of primary growths except in cases of very small tumors or in patients in whom a suprapubic cystotomy under an anesthetic is contra-indicated. In cases of repeated recurrences after suprapubic operations, the method is to be recommended over the performance of frequent suprapubic operations.

My personal experience with the intravesical operation is limited to one case which I shall briefly report.

A man (G. R.) aged sixty-one was operated on by Dr. Cabot in 1906 for a large papilloma on the left wall of the bladder. Recent glycosuria cleared up before operation. Suprapubic cystotomy was done and the tumor cut away from the bladder wall with the actual cautery. Patient made a good recovery, but in the winter of 1908 hematuria returned and a recurrence of the growth was seen with a cystoscope. In March, 1908, second suprapubic cystotomy revealed several large papillomata growths in both lateral and posterior walls of bladder. These were removed as before. Patient was well, without further bleeding, until the spring of 1910, when he had one or two brief attacks of hematuria. On Dr. Cabot's invitation, on June 25, 1910, I cystoscoped the patient, finding a rough, pinkish, oblong mass at the top of the bladder, apparently in the suprapubic scar. I introduced Young's cystoscopic rongeur, under cocaine, and with 4 oz. of boric solution in the bladder was unable to reach the growth, largely, I think, on account of the moderate enlargement of the prostate gland. On my drawing off about half of the solution and pressing down on the suprapubic scar, the growth was grasped in the jaws and a piece amounting to about one third of the whole mass was removed. Separation of the portion caught in the jaws of the instrument was difficult and required a rather vigorous pull before it came away, which was painful. There was moderate bleeding, enough to cloud the medium and prevent further attack on the tumor. There was only slight tingeing of blood in the urine for the next twenty-four hours and no reaction. About ten days later, second attempt was made, which succeeded in removing two small fragments only. On inspecting the bladder wall before attacking the tumor, a couple of small papillomata were seen on the left side of the fundus near the left ureter. Following the operation, the patient went away on a vacation, and was apparently free from bleeding for some time. I had hoped to remove the remaining growths at further sittings, but the patient, in September, had a slight hemiplegia, and soon after, attacks of hematuria recurred, confining him to bed.

Soon after this the glycosuria returned, and uremic symptoms developed. His physician recently informed me that the hemiplegia became complete, and death shortly followed. Towards the end, the hematuria was severe, and injections of resorcin into the bladder were without effect.

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## THE EXAMINATION OF THE NOSE AND THROAT IN RELATION TO GENERAL DIAGNOSIS: RESULTS IN ASTHMA FOLLOWING NASAL OPERATION.*

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IN a consideration of the relation between nose and throat affections and other diseases which are met by the general practitioner, two facts must be kept in mind; first, that the patient's general condition affects the mucous membrane of the nose and throat, and, second, that abnormal nasal conditions affect the general health. It is well known that the nasal mucous membranes are more or less abnormal in every affection which impairs the general health. On the other hand, there are undoubtedly many cases in which the poor general condition is at least in part due to

* This paper is written from the viewpoint of one who is interested principally in medical and surgical diagnosis, and, therefore, is lacks the merit of technicality which might be given by the rhinologist.

unrecognized trouble in the nose and throat. We willingly look upon diseased adenoids and tonsils as harmful, but we do not seem to be so much awake to the fact that other nasal conditions are nearly if not quite as important. Even though prejudice exist in the matter, this should not be an excuse for failure to examine the nose and throat as is often the case. That affections of the nose and throat are not being carefully considered is constantly brought to one's attention. A patient with pronounced nasal symptoms may have visited a dozen physicians, none of whom has examined the nose nor suggested an examination. Meanwhile "catarrh" remedies make fortunes, and the cocaine habit increases. That affections of the nose and throat are credited with an effect out of proportion to their real significance is also true, though this is not done so often by general practitioners.

The specialist who is tempted to jump to the conclusion that nasal disorders can cause everything in all degrees of severity should protect himself by accepting the opinion of those who deal intimately with general treatment. Evidence must be weighed after a general physical examination has been made before deciding upon the significance of any existing nasal condition. The specialist who completes the toilet of his "hundred patients a day" by means of sprays and nebulizers is doubtless filling a popular demand, but he is also a purveyor of mental suggestion in a manner which has little to commend it.

By nasal treatment one would better mean the mechanical removal of diseased parts, or obstructive parts, and the drainage of confined pus; i. e., the removal of polypi or hypertrophied turbinates which obstruct breathing, and the drainage of sinuses; and this for the most part by clean-cut surgery. Treatment doubtless has its place, but should be much restricted.

I shall review in a general way a number of conditions in which nose and throat examinations more particularly suggest themselves, or in which nasal treatment has proved efficacious; and in closing will give some statistics relative to asthma.

The complaints of nasal discharge, of deafness and of nasal obstruction are so often heard and so easily elicited that one would hesitate to consider them were it not for the fact that the physician generally dismisses the matter with a passing remark concerning the frequency of "catarrh," and, strangely enough, the patient seems satisfied. These complaints should be heeded and a careful nasal and aural examination made in order to determine just what may be expected from nasal operation or treatment. Polypi, antrum disease or hypertrophied turbinates may be the cause of the "catarrh."

Acute headaches with fever, no matter to what part of the head the pain may be referred, are often due to sinusitis. The headache is often intense and one may suspect the onset of a severe general infection. Many times when grippe is diagnosed, whether the influenza bacillus is concerned or not, the severe symptoms are relieved upon drainage of an antrum or frontal sinus. Indeed, this is often a more urgent matter than drainage of pus from other parts of the body.

Dull, heavy headaches of a more constant and chronic type, sometimes confined to one side of the head, are quite often due to nasal obstruction or sinusitis. In these cases the turbinates may be hypertrophied or polypoid, and local treatment or operation may be advisable according to the nature of the condition found.

Periodical headaches, or sick headaches, are generally of nervous origin, and nasal operation should be advised only when more serious nasal trouble is found. Something can be learned from examination of the nose during an attack. Even in this type of headache, however, considerable relief, particularly in the severity of the attacks, follows operation in properly selected cases. Indeed, we believe examination of the nose and throat in the various forms of headache to be more important than the examination of the eyes; yet in most of our cases the eye condition has been previously corrected, while the nose and throat have been almost entirely overlooked.

The association of headache or nasal obstruction with the onset of the patient's complaint, particularly if the complaint be a periodical one, makes us suspect nasal disorder. This is observed in several conditions. Asthma, epilepsy, dizziness and various stomach and digestive disorders of a milder type are frequently associated with headache. The headache is generally the resultant, in these cases, but occasionally it would seem to be the antecedent, and if so one must consider the possibility of nasal influence. Especially have we seen benefit from operation when there is a complaint of morning nausea and vomiting associated with headache, if the patient does not impress one as being markedly neurotic. Many patients complaining of dizziness associated with nasal obstruction or headache have been relieved. The epileptic should have the same careful examination that is required in cases of headache, including the eye, nose and throat. One does not expect cure of epilepsy to follow operation, but frequently improvement has been observed. Cases certainly should not be operated upon unless decided trouble is found.

The effect of chronic fibroid tonsils upon the recurrence of articular rheumatism and other diseases of the rheumatic cycle should be considered. Cases of chorea will often improve more rapidly after tonsillectomy.

The relation of tonsillitis and sinusitis to the more chronic types of arthritis is indefinite and requires more study.

More particularly must one emphasize the importance of a careful search for all possible causes of severe anemia. Anemia of itself will cause intumescent turbinates and an edematous condition of the nasal mucous membranes. This must be interpreted as secondary. But, on the other hand, an antrum full of pus will make it difficult to improve the blood. I have seen anemics improve rapidly after drainage of an antrum when placed upon the very treatment which had formerly failed.

Patients with facial neuralgia have been operated upon several times before an antrum full of pus was discovered, the pain promptly disappearing after proper drainage.

Tumors of the face and neck, including goiter, should have nose and throat examinations for diagnostic purposes. A few glands high up near the angle of the jaw, even if they are quite large, may disappear rapidly after tonsillectomy. With tuberculous glands of the neck, the tonsils are usually in bad condition, and sometimes it seems best to remove them. In goiter, paralysis of a cord may be present even though no hoarseness exists, and if this be not discovered before thyroidectomy, the surgeon is unjustly blamed. One occasionally sees a cyst in which malignancy has been suspected correctly diagnosed as abscess of the antrum by means of nasal examination. Tumors of quite similar characteristics are found upon nasal examination to be sarcomata of the antrum. Cases long treated as ulcerated tooth prove to be abscess of the antrum.

It need hardly be mentioned that mediastinal growths and thoracic aneurysm often cause paralysis of a vocal cord, generally the left, occasionally the right, and that the patient is sometimes referred from the nose and throat department for general examination. It is not so well-recognized, however, that an apical lesion of the lung may cause paralysis of the right vocal cord.

It is well to know the nose and throat findings where lues is suspected. The diagnosis is often very easily confirmed in this way and occasionally a doubtful case is entirely cleared up. A luetic perforation of the bony septum is easily overlooked. One must be careful, however, not to diagnose every perforation of the septum as syphilitic. Some are traumatic, others trophic or tuberculous, but these are generally perforations of the cartilage.

Irritative cough, especially night cough, may be entirely a reflex matter, and sinusitis may be found. This leads directly to a consideration of certain forms of asthma which are apparently influenced by nasal conditions. Our experience with nasal asthma has been moderately encouraging. Every asthmatic is referred to the nose and throat department in the course of routine examination, and selected cases are operated upon; that is, cases which show polypoid growths, sinusitis or hypertrophied turbinates, which clearly cause nasal obstruction.

During the year 1909, 66 cases of asthma were operated upon by Dr. Justus Matthews, in the clinic of St. Mary's Hospital. In 35 cases turbinectomy was done; in 26 of these, double middle turbinectomy; in 10, one or both inferior turbinates were also resected. This was the operation of greatest frequency. In 12 cases polyps were removed. In 9 one or both antrums were drained, and in 6, deformities of the septum were corrected. Four cases were in children, and adenoids and tonsils were removed.

In the general examination of these patients there did not appear to be any distinction between the different types of nasal affection discoverable in the symptoms, or signs of the asthma. After operation the patients were placed upon small doses of iodide for two or three weeks, as is customary after nasal operations.

Reports have been received from 52 cases, nine months to one and one-half years after operation. Two have since died of unrelated affections. Two are worse than before operation; the attacks are more frequent and more severe and the general health is worse. Thirteen can see no definite change in their condition. The frequency of attacks may be diminished and the severity increased, or vice versa, but they cannot report themselves as better or worse. Thirty are definitely much improved, both as to frequency and severity of attacks, and in their general condition. Five consider themselves cured, which, of course, only means that they have had no attacks since operation. One of these patients had had asthma for twenty years, another for sixteen years.

In other words: Definite improvement has followed in 57%, and "cure" in about 10%.

On tabulating the results, one finds that, in general, when the attacks become less frequent, they also become less severe. The general health had improved in 33 of the 52 patients. Headache had been a symptom in 31 cases and had improved in 24. Mild stomach symptoms were elicited in 25, and had improved in 20.

Of the operations upon the 5 patients who were "cured," 4 were turbinectomies, and 1 the removal of polyps.

Improvement followed in 3 of the 4 cases in children in which adenoids and tonsils were removed.

The most unusual things will occasionally cure asthma. Looking upon the condition as a spasmodic neurosis, one would, however, expect strange cures. In reality one should not strive for cures only, but should be satisfied with any procedure which will cause improvement in the majority of cases. Nasal operation seems to do this if the patients are properly selected. And there would seem to be good logic in freeing the respiratory tract of anything which might cause reflex irritation.

In conclusion, it may be reiterated that examination of the nose and throat for diagnostic and therapeutic purposes should not be neglected. On the other hand, these are not parts of the anatomy to be needlessly tampered with simply because they are accessible. Like the gynecologist, the nose and throat man may court distrust by overenthusiastic specialization.

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THE HEALTH TRAIN. — Up to the first of the year, the health exhibit train sent out by the Louisiana State Board of Health has visited twenty parishes and fifty-two towns, and it is estimated that 5,600 people have visited the car and that 1,500 have attended the meetings and lectures on hygiene and sanitation. The train is expected to tour Mississippi after the work in Louisiana is finished.—*Jour. Am. Med. Asso.*

# Reports of Societies.

## AMERICAN UROLOGICAL ASSOCIATION.

Fall Meeting of the New England Branch, Boston Medical Library, Nov. 29, 1910.

*President*, Dr. Paul Thorndike, Boston.
*Secretary*, Dr. Richard F. O'Neil, Boston.

### Demonstration of Specimens.

SPECIMENS OF TUBERCULOSIS OF THE KIDNEY, IN





Branching calculi in left kidney.



Calculus in right ureter.

active infecting agent is deposited in the tissues about the tubercular focus. If, then, the process goes on so rapidly that there is great destruction of tissue and discharge of pus and detritus, there may be so rapid a removal of the tubercle bacilli that they appear profusely in the urine for a while and then more rarely until they escape only when an occasional focus breaks down. A sediment injected at a time when there are free bacilli should and probably will produce tuberculosis in a guinea pig, but there may be times when a tubercular kidney will secrete urine free of bacilli. There is then no constant stream of bacilli flowing out of a tubercular kidney, and while the presence of tubercle bacilli in the properly obtained sediment proves their source to be in the urinary tract, their absence proves nothing so far as diagnosis goes.

Dr. W. F. Whitney: I remember a case similar to Dr. Tenney's a year ago. Many examinations of the urine were made, all with negative results, and then later great quantities of tubercle bacilli appeared.

### A case of double renal calculus. Nephrectomy. Recovery.

Dr. F. B. Lund: This case is shown on account of the interest attached to the clinical problem of the removal of very extensive calculi in one kidney at the halves of the kidney were united by deep catgut sutures around a large rubber tube which was passed through the wound into the pelvis of the kidney and brought out of the external wound. The bleeding having entirely stopped, the kidney was replaced and the external wound drained. The patient was in good condition at the close of the operation, at about ten in the morning. At twelve, it was noticed that the dressing was stained with blood and the patient's pulse had risen from 80 to 100. At three in the afternoon, his pulse was 120. The patient was restless, sweating and pale and the dressing badly soaked with blood. It was then seen the nephrectomy must be done in order to stop the hemorrhage, and the

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# Reports of Societies.

## AMERICAN UROLOGICAL ASSOCIATION.

FALL MEETING OF THE NEW ENGLAND BRANCH, BOSTON MEDICAL LIBRARY, NOV. 29, 1910.

*President*, DR. PAUL THORNDIKE, Boston.
*Secretary*, DR. RICHARD F. O'NEIL, Boston.

### DEMONSTRATION OF SPECIMENS.

#### SPECIMENS OF TUBERCULOSIS OF THE KIDNEY, IN WHICH GUINEA-PIG TEST WAS NEGATIVE.

DR. B. TENNEY, Boston: Within a short time I have done three nephrectomies for pain, with pus and blood in the urine and frequent and painful urination. The symptoms of disease had been present in these patients for four, six and three years. One had had his appendix removed and a cystotomy with drainage for three months before his nephrectomy. Both of the others had lost ovaries, tubes and appendices. In every case the urinary sediments had been injected into guinea pigs, — twice with one patient, — and the autopsy findings on the pigs after six weeks were negative. The examinations were all made at the municipal laboratory, where the rule is to inject two pigs at a time and never to autopsy before six weeks.

Two of the removed kidneys were examined at the Harvard Pathological Laboratory and the other at Tufts. The diagnosis returned to me was tuberculosis in each case.

Without thinking much about it, I had assumed that the negative answer from the guinea-pig test was evidence against the diagnosis of tubercular kidney. Here are three cases where it was worthless. Two years ago I had another surprise. Here is a color drawing of a hydro-pyo-nephrosis in a rabbit, which was produced by an injection of a suspension of tubercle bacilli which were obtained in pure culture from Prof. Theobald Smith and injected into the renal artery of the rabbit. The culture was three years old and was fatal to guinea pigs. The rabbit died ten months after the injection and the kidneys and bladder were removed and turned over to Dr. E. H. Nichols for microscopic examination. He could find no trace of a tubercular process anywhere in the little remaining kidney tissue, the wall of the sac or the ureter, and yet I know that the process started with a tubercular infection ten months before death.

The only explanation which appears reasonable and adequate is that some other infective agent, more active than the tubercle bacillus, came in, producing more active destruction of tissue, and that the more active process overgrew and destroyed or removed the tubercle bacilli and the evidence of their previous occupation.

It is reasonable to suppose that the same thing may occur in the human kidney. A deposit of tubercle bacilli may occur and extend but slowly until a more active infecting agent is deposited in the tissues about the tubercular focus. If, then, the process goes on so rapidly that there is great destruction of tissue and discharge of pus and detritus, there may be so rapid a removal of the tubercle bacilli that they appear profusely in the urine for a while and then more rarely until they escape only when an occasional focus breaks down. A sediment injected at a time when there are free bacilli should and probably will produce tuberculosis in a guinea pig, but there may be times when a tubercular kidney will secrete urine free of bacilli. There is then no constant stream of bacilli flowing out of a tubercular kidney, and while the presence of tubercle bacilli in the properly obtained sediment proves their source to be in the urinary tract, their absence proves nothing so far as diagnosis goes.

DR. W. F. WHITNEY: I remember a case similar to Dr. Tenney's a year ago. Many examinations of the urine were made, all with negative results, and then later great quantities of tubercle bacilli appeared.

#### A CASE OF DOUBLE RENAL CALCULUS. NEPHRECTOMY. RECOVERY.

DR. F. B. LUND: This case is shown on account of the interest attached to the clinical problem of the removal of very extensive calculi in one kidney at the time when there is a calculus probably in the ureter on the opposite side.

The patient, a man of thirty-seven, was well until six weeks before I saw him and actively engaged in his employment as shipper in a large mill. Six weeks ago he was standing on the front platform of an electric car when the car was struck from behind so that a brass rail on the car gave him a blow on the left side of his back. Then he began to suffer from severe headaches and to pass bloody urine. He called on his physician, Dr. Hartwell, of Norwood, who found clear, fresh blood in his urine. He was given urotropin but continued at his employment. The blood gradually disappeared from his urine and one week ago his headaches and backaches had left him. Three days before I saw him, in the afternoon, he was attacked with severe pain in the right side extending down into the right testicle. Yesterday he had a typical attack of renal colic. He was doubled up with pain requiring morphia. Blood had reappeared in his urine. Examination showed a well-developed, well-nourished man, rather pale; no swelling or tenderness could be felt in either loin. The x-rays were then taken by Dr. Percy Brown and they are reproduced here. As you see, there is shown a very extensive calculus formation in the right kidney, and a small calculus apparently in the left ureter. A careful attempt was made by a skilled operator to catheterize the ureters, which was not successful owing, apparently, to the swelling and edema about the ureteral orifices. It was thought absolutely essential to remove the stones in the left kidney, and it was determined, if possible, not to remove the kidney itself on account of the doubt whether the right kidney was capable of carrying on sufficient urinary excretion, especially since it seemed probable that there was a stone in the right ureter. On July 25, I cut down on the left kidney through a lumbar incision. The kidney was found considerably enlarged and lobulated, there was a soft spot near the upper pole, and it was found to be filled throughout with a great, branching stone. The kidney substance was thin at the upper pole and was there incised, allowing the escape of purulent urine. In order to get out the branching stone, it was necessary to completely bisect the kidney. The bleeding was controlled by tension on the vessels and by pressure with the fingers of an assistant. After removing the stone, the two halves of the kidney were united by deep catgut sutures around a large rubber tube which was passed through the wound into the pelvis of the kidney and brought out of the external wound. The bleeding having entirely stopped, the kidney was replaced and the external wound drained. The patient was in good condition at the close of the operation, at about ten in the morning. At twelve, it was noticed that the dressing was stained with blood and the patient's pulse had risen from 80 to 100. At three in the afternoon, his pulse was 120. The patient was restless, sweating and pale and the dressing badly soaked with blood. It was then seen the nephrectomy must be done in order to stop the hemorrhage, and the

kidney which you see here was removed. It was considerably dilated and thinned out in places, but contained a good deal of healthy kidney tissue. The other kidney immediately took up the double burden and the amount of urine was sufficient almost from the first. There has been no blood in the urine and no attacks of calculus colic on the right side. The patient has gained markedly in health and strength, he is hard at work and says he feels better than ever before in his life. An x-ray would be interesting so as to see whether the stone seen on the other side is still present, but owing to the man's condition and the absence of blood in the urine it seems probable that this stone has at some time been passed. I think it is much safer to remove a kidney so greatly affected by calculus disease as was the left kidney in this case, under ordinary circumstances. The risk of leaving it after splitting it and sewing it together was taken, in this case, however, on account of the danger that the other kidney might not be adequate to the double burden. When nephrectomy became compulsory it was gratifying that such proved to be the case.

In regard to the source of the hemorrhage, it may be stated that the deep sutures of catgut passed through the pelvis of the kidney and tied around its outer border, thus radiating from the pelvis as a center. No quilt sutures were passed as it was thought there might be a possibility of causing necrosis of the kidney tissue by tying too tightly and the deep sutures apparently completely controlled the hemorrhage. After replacing the kidney in the loin it was observed, for about two minutes, that the hemorrhage had apparently stopped, so that it seems as if it could hardly be due to the relaxation of the tension in the vessels, occasioned by putting back the kidney. The weight of the calculi, which proved to consist of one very large branching calculus and one small, spheroidal calculus, was 710 gr.

### UNILATERAL KIDNEY.

DR. J. D. BARNEY: I wish to show you to-night a good specimen of congenital unilateral kidney. I am enabled to do this through the courtesy of Dr. Magrath, our medical examiner, who removed the specimen in a medico-legal autopsy.

I will read Dr. Magrath's description of this specimen.

Kidneys: The left seemingly absent; the left adrenal gland in normal position, 6 x 3 cm.

Section of aorta shows right renal artery in normal position, with absence of the left. Just below the orifice of the inferior mesenteric artery are two small openings, evidently those of the left adrenal arteries. The inferior vena cava shows a single renal vein, that of the right side. The left spermatic vein runs upwards to the adrenal gland, apparently anastomosing with veins from the gland.

On careful dissection no left ureter is demonstrable; the right ureter is in normal position.

Right kidney in normal position, likewise the right adrenal gland; estimated weight of kidney, 200 gm.; length, 13.5; breadth, 7; thickness, 4.5 cm. Surface smooth, brownish-red. Upon section color is similar throughout. Cortex, 0.9 cm. thick. Markings and consistence normal.

Bladder practically empty, mucosa somewhat injected. Right ureteral orifice easily demonstrable, the left not apparent.

External genitalia normal.

If any one is interested, I will refer them to the article on this subject by Dr. J. M. Anders, of Philadelphia, published in the *American Journal of Medical Sciences* in March, 1910. I have made the following notes from it. Out of a grand total of 92,690 autopsies, the ratio of unilateral kidney is 1 in 1,817. Two hundred and eighty-six cases have been reported to date. It occurs more frequently in Wales. The age at time of death is of interest, as showing how little life may be affected by this condition. Thirty-four died under ten years of age, 62 died from the tenth to the fiftieth year, 58 died after the fiftieth year, 2 died after the eightieth year. The left kidney is more often absent than the right, but when sex is considered it is found that the right side is more often absent in women than in men. In practically every case the ureter is entirely absent, but in a few it may be rudimentary. The adrenal gland is usually present on the side of the absent kidney. In a large per cent of cases the external genitalia show some congenital defect.

Unilateral kidneys have often been operated on, and not infrequently removed. With our modern methods of cystoscopic examination such a catastrophe is bound to be a rarity, to say the least, but there are emergency cases (ruptured kidney, for instance) where no time or means are at hand to ascertain the conditions, and where the surgeon has no choice but that of operative interference.

### DISCUSSION.

DR. P. THORNDIKE: I also wish to be known as one of the twenty-seven men who have taken out a single kidney. Some time ago I found on the accident table at the City Hospital a man bleeding to death from a ruptured kidney. He was exsanguinated. He had a bladder full of blood and a blood tumor in his loin. He had fallen into the hold of a ship and ruptured his kidney. It was an acute surgical emergency. I made a loin incision and took out the crushed and battered fragments of what was once a kidney. The man died shortly after and at the autopsy it proved that this was the only kidney that the patient had. In this case the operation was imperative to save life. There was no time for cystoscopy or further examination, and no good could have come from them had they been attempted.

DR. F. S. WATSON: I think Dr. Barney has understated the number of cases of single kidney that have been operated on. I may be wrong; I hope so, because I have done it myself and know of a surgeon who has had a similar misfortune.

DR. L. DAVIS: I had a case last summer at the Massachusetts General Hospital, supposed to be an acute appendix. A woman was admitted through the accident room with a large mass in the right flank, which was moderately tender; she had fever and pain. I thought it was an acute infection of the kidney, and cut down on it without preliminary cystoscopy, as the patient seemed acutely sick. I found a big tumor of the kidney like a hypernephroma. Passing the hand into the peritoneal cavity, I could feel no kidney on the other side. There was nothing to do but back out and sew up the wound. A subsequent cystoscopic examination showed absence of a ureteral opening upon the left side. The patient has failed rapidly since operation, and I think there is no question but that it is a case of malignant disease of a solitary kidney.

### DIVERTICULUM OF THE BLADDER REMOVED AT OPERATION.

DR. A. L. CHUTE: I showed at one of our meetings last spring a radiograph of a ureter catheter with a metal stylet coiled up in a diverticulum of the bladder. I now have the excised diverticulum to show you.

This man, age thirty-four, was referred to me by Drs. Whitney and Pearce. He had had several attacks of gonorrhea. His urine had been very turbid for a year and a half and he had had at times discomfort on

urination. Bladder washings and vaccines made from his own strain of colon bacilli had given no relief.

Bladder examination showed a diverticular opening about the size of an ordinary fountain pen barrel near the left ureter. He had a residual of 5½ oz. His reflexes were normal, as was his prostate. On Oct. 5 a ureter catheter was passed into his left ureter, to serve as a guide, and his bladder washed and distended with air. An incision was made through his left rectus muscle and carried down into the perivesical connective tissue. The peritoneum was pushed backward from the bladder and diverticulum. The latter showed as a small sac just to the left of the bladder.

The dissection was carried on with a good deal of difficulty until the diverticulum had been everywhere separated except at its point of communication with the bladder. The sac was difficult to separate at its neck and had to be opened before this could be done. I tied off the sac, cut it, and brought the muscular coats of the bladder together over the stump with two layers of sutures. I used a large drainage tube and wicks brought out at the lower angle of the wound. The loose connective tissue about the bladder suppurated very freely, but there was no leakage of urine at any time. The convalescence would, I believe, have been shorter if I had drained through the perineum as Von Eberts did in his case.[1] The ureter catheter was a great help in closing the opening in the bladder, which was very near the ureter.

The specimen I show you has been "reconstructed" in a way, in that it has been distended with gauze and sewed up. It is less large than it looked *in situ*. It is probably of the acquired type as its walls were made up of mucous membrane and a layer of friable fat. The opening into the bladder was in a higher level than the base of the diverticulum, which rested on the muscular diaphragm of the pelvis.

The patient has now reached the stage where his urine is clear for several days at a time, and then becomes a little turbid. He does not quite empty his bladder, having a residual of about an ounce. Whether this residual is due to faulty contraction of the bladder, due to adhesions following operation, or to a small bar at the outlet is not evident. The patient shows normal reflexes.

*Radiographs of a dilated kidney pelvis.* — Here are two radiographs, taken by Dr. Percy Brown, of a renal pelvis filled with 10% collargol solution. They show very well the dilated pelvis and calyces and also the sagging of the kidney when the patient stood. The patient, a woman of thirty-nine, had a marked enteroptosis. A year ago she had her uterus fixed to the abdominal wall. She then began to have attacks of severe pain that began in her right loin and radiated to her bladder. They would be followed by the passage of a large amount of clear urine. Catheterisation of her right renal pelvis showed a residual of 17 ccm. of clear urine. If distention of her pelvis was carried beyond 30 ccm., it started the same sort of pain that she had during her attacks. It seemed probable that her movable right kidney caused at times overdistention of the kidney pelvis and the attacks of pain.

Her kidney was exposed and freed; the ureter joined the kidney pelvis normally, but was twisted and curved below the kidney. The ureter showed no other abnormality. The kidney was fixed in place and some months later catheterization of the kidney pelvis showed no residual. For a time this patient was free from pain; now she complains of severe pain in the gall-bladder region. Such attacks of kidney pain as I saw seemed real.

[1] Ann. Surg., 1909, vol. l, p. 823.

HYPERNEPHROMA.

Dr. P. Thorndike: I wish to show this specimen, which is the half of a right kidney, the greater part of which has been invaded by a hypernephroma. It came from the one patient upon whom I have ever operated for bleeding so severe as to be an acute surgical emergency. I saw the patient late in his disease. He was bleeding so fast that his bladder was constantly full of blood, which he was straining to pass, and there was a tumor of blood in his loin. Immediate nephrectomy was done. The substance shows that almost the whole of the kidney substance has been replaced by the diseased tissue.

Dr. Lincoln Davis read a paper entitled

SOME CLINICO-PATHOLOGICAL DATA ON BLADDER TUMORS.[1]

Dr. C. L. Scudder read a paper entitled

THE TRANSPERITONEAL AND SUPRAPUBIC APPROACH TO TUMORS OF THE BLADDER.[2]

Dr. Horace Binney read a paper entitled

THE PRESENT STATUS OF INTRAVESICAL OPERATIONS FOR TUMORS OF THE BLADDER.[3]

DISCUSSION.

Dr. W. F. Whitney: In regard to the pathology and prognosis of tumors of the bladder. While any form of tumor that occurs in other parts of the body may occur here, the papilloma and cancer are by far the most important and frequent.

It is strange that papillomata should develop from a mucous surface which normally is without papillæ. But such is the fact, and these fibro-epithelial growths probably start from small vessels which push out above the surface and carry with them the fibrous tissue and epithelial covering. These keep pace with their subsequent growth and branching. If this is all, there is finally formed a branching villous growth connected by a thin stalk with the bladder wall. These are essentially benign, although often multiple, and their removal is not followed by recurrence.

But this process is not always so simple, for with the outgrowth there is frequently a tendency for the epithelium to grow into the submucous tissue to a varying extent. With this comes the tendency to recur, and then the name of a villous cancer becomes justified. Unfortunately for the differential diagnosis, simple inspection or even microscopic examination of the relatively easily accessible villous part does not enable one to be made always. Although the thickness of the epithelial layers, and the abundance of mitotic figures, may make one suspicious, the true nature only can be determined surely after examination of the base. Here, besides solid epithelial columns, there are found sometimes hollow tube-like structures lined with epithelium recalling tubular glands. These have been regarded as arising from included epithelium from the interstitial tract during development. There is little tendency for these tumors to generalise, and they extend, locally invading the surrounding tissues and near lymph nodes. Upon this is based the hope of relief that may be expected to follow a radical operation, unfortunately limited by the anatomical relations.

Besides these, there are cancers which start as such at the beginning without any outgrowth, but begin to infiltrate from the very commencement. The male sex over fifty are most frequently the victims of such growths.

[1] See Journal, page 222.
[2] See Journal, page 224.
[3] See Journal, page 226.

I wish to show the specimen of cystic growth having its origin in the prostate mentioned by Dr. Davis in his paper.

It was an oval growth the size of an egg. On section, it showed numerous cysts of varying size. The structure was that of the prostatic gland in which the acini had increased and dilated to form the cysts. Just beneath the surface, in one part, there was a serous infiltration of the subepithelial tissue with extension between the epithelial cells, forming between them small cystic cavities. This latter condition is a very unusual one.

DR. F. S. WATSON: In the surgical treatment of cancer there is little, if any, disagreement with respect to the following things:

1. If cure or lasting results are sought, it is futile to employ any surgical procedure which does not remove or destroy all the tissues invaded by the disease.

2. In a few examples of the disease, of which cancer of the lip is one, this may be accomplished by means of an operation of relatively slight extent and gravity; in the great majority this is not the case, and we are obliged to employ very radical and extensive measures if we would gain our end.

3. When the disease has its seat in some organ of the body, experience has taught us that even when but a small part of the organ is involved in the process we must nevertheless remove the whole organ and oftentimes more or less of the adjacent structures as well, if we would provide the best protection against recurrence, and that we do not secure this if we limit our operation to the removal of the tumor itself or to a part of the organ only.

4. That the one golden opportunity to obtain cure in cases of cancer is by performing a most thorough and radical operation at an early stage of the development of the disease.

5. That it is not reasonable or proper to apply radical procedures in cases in which such measures cannot offer a reasonable chance of removing all the tissues invaded by the disease, or when the danger to life is very great, or when if the patient survives he is left with a very distressing infirmity or is disabled.

Now the question is, Is vesical carcinoma an example of the disease in which we can hope to prevent recurrence by means of an operation of relatively slight extent and gravity, as we may in cases of cancer of the lip, or is it one to which we must apply the most radical measure that is justifiable if we would secure that end? That is to say, shall we best protect the patient against recurrence by employing excision of the tumor, by partial resection of the bladder or by total cystectomy? The whole history of the surgical treatment of vesical carcinoma forces us to the conclusion, as it seems to me, that the only logical road to follow when seeking cure in these cases is by the application of total cystectomy, for nowhere more than in the bladder does carcinoma show the tendency to recurrence, and it has been one of the most discouraging chapters in the history of the surgical treatment of cancer.

In view of this record of failure, in view of the fact that the disease is slow of development in some cases, and in view of the further fact that a comparative degree of comfort can be secured for a good many of the patients by the employment of palliative surgical methods, many surgeons are tempted to give up the effort to obtain cure by radical operations and advocate the use of the palliative ones only, no matter in what stage of development the tumor may be.

This position is not altogether unreasonable, and there is something to be said in favor of it, but it does not seem to me to be a sound one to take until we have exhausted our resources in seeking cure, and I do not think we have arrived at that point yet. I say this because I do not think we have hitherto given the operation of total cystectomy a fair chance to show what it can accomplish by way of obtaining cure. With but few exceptions it has been practiced in the worst cases only; those in which the tumor was extensive and when the patients have been much enfeebled and are not in a condition to withstand the performance of so grave a procedure. In some instances it has been done when the disease had already exceeded the limits of the bladder and when, therefore, it was improper to have applied any radical measure at all; finally, it has until very recently been carried out in a manner which invited disaster and failure.

While these things have been true of total cystectomy, quite the contrary has been the case with respect to the operations of excision and of partial resection, both of which have been employed under far more favorable conditions in far the larger number of cases. Total cystectomy, then, has been shown at its worst, the other two measures at their best. We cannot, therefore, look for any important gain in the results of these, while we have, I believe, good reason for anticipating much better ones from total cystectomy.

The objections to that operation have been, of course, the immense mortality attending it and the distress which it involved to those who survived it, owing to the existence of a permanent urinary fistula or to the emptying of the urine into the vagina or the bowel.

Now if we could greatly lessen the mortality of this procedure and so dispose of the urinary drainage as to not merely secure the comfort of the patient, but allow him to lead an active life, we should at once place total cystectomy among the practical operations, and it would not only become much more frequently employed, but would be, as I have said, the only logical road to follow when seeking to obtain cure in cases of vesical carcinoma.

In the December number of the *Annals of Surgery*, 1905, I presented a plan by which I believed these ends could be secured and the grave objections to total cystectomy overcome. In the course of that communication I showed that the great mortality of the operation was due to two things: Shock, and renal infection. I showed, furthermore, that the deaths from renal infection were due in most instances to ureteral implantation which invited it, and I stated it as my belief that the deaths from shock were due to the fact that the diverting of the urinary secretion was carried out at the same time that the bladder was removed, thereby greatly prolonging that part of the operation and making it a difficult and trying procedure and one of great severity.

The plan by which I proposed to overcome these difficulties and objections to the operation was as follows: (1) To abandon ureteral implantation altogether, and in its place to substitute simultaneously performed bilateral nephrostomy, tying off the ureters high up and establishing renal fistulæ in the loins. (2) That this operation should be done as a step preliminary to the removal of the bladder. (3) When the patient should have recovered from the nephrostomies, to remove the bladder and its adnexa, which then would become a relatively simple and rapidly performed operation because of having the necessity of diverting the urinary secretion eliminated from it and attended to beforehand.

By this means I believed that the deaths from shock would be greatly lessened, and by the same means I felt sure that those arising from renal infection would become greatly decreased, as we know that nephrostomy and continuous drainage if properly arranged and properly cared for does not invite infection of the kidneys

and that when infection did occur, its consequences were rarely of serious import to the patient.

I confidently predicted that if this plan were applied when the tumor was in an early stage of development, we should obtain a very considerable number of cures or lasting results.

The essential features of the plan were then as follows: Reducing of shock and averting of renal infection by one and the same step, namely, preliminary bilateral nephrostomy, tying off the ureters and establishing permanent renal fistula in each loin.

There remained to be dealt with the second objection, namely, the distress to the patient arising from the existence of a permanent renal fistula. This I overcame by devising an apparatus for disposing of the drainage and leakage of urine, by means of which the patient is kept dry, free from odor and perfectly comfortable, and is thus enabled to lead an active life.

I have a patient who has had a renal fistula in one loin for sixteen years and one in both loins for the past seven years. Throughout this time he has been in good health, perfectly comfortable, and actively engaged in a business that requires him to mingle freely with people, none of whom are aware of his infirmity owing to the fact that he is not soiled with urine and his clothes are kept dry and free from odor. This one case is a refutation of the oft-repeated phrase that the distress necessarily connected with permanent urinary fistula in the loin is so intolerable to the patient that he may well prefer death to enduring its miseries. That statement is true only for the patient of the surgeon who does not know how to arrange for the disposal of the drainage and leakage of urine in such a way as to secure for him comfort and the ability to lead an active life such as I have given to the one to whom I have referred.

I am happy to say that this plan which I proposed six years ago has appealed to some of my colleagues and has either received their endorsement or been adopted by them. These gentlemen are the distinguished president of our first Congress in Paris, Albarran; his brilliant young associate, Heitz-Boyer, and Brongersma, in Europe; in America, my much-esteemed colleague, the late Tilden Browne; my fellow townsman, Hugh Cabot; while its essential feature, namely, the preliminary diverting of the urine, has been put in practice by Bottomley, of Boston, and our eminent president of this congress, Fenwick, though the two last-named gentlemen have preferred to employ ureterostomy for the purpose instead of the double nephrostomy which I advised.

In conclusion, I wish to say a few words with regard to the treatment of the benign tumors.

The following things have been established with respect to this class of tumor:

(1) Nearly two thirds of all vesical tumors are malignant. (2) There is an extraordinarily marked tendency to recurrence after the removal of such tumors. (3) In some cases this recurrence is in the form of multiple tumors; in some it has been in the form of a malignant tumor *in situ*, and in a few it has been in the form of another benign neoplasm. (4) As many as nine years have elapsed after the removal of a benign tumor and the appearance *in situ* of a malignant one. (5) Single papillomata having well-marked stems, and a relatively small base, if found to be of benign structure after removal, upon examination of all its parts, do not as a rule recur. In some instances also of broad-based sessile tumors of benign nature recurrence does not take place, though in a larger number of them it does occur. I have one patient from whose bladder I removed by excision such a growth having a base as large as a crown piece twenty years ago who has never had the slightest evidence of recurrence.

In view of the facts just stated, it seems to me that we should treat cases of recurrent tumors following the removal of benign ones *in situ* in the same way that we should treat malignant tumors at the outset, unless we have very good reason to feel sure that the recurrent tumor is also benign.

For benign tumors in the first instance, the endovesical methods may be employed fitly, but I cannot see wherein they are more likely to be productive of lasting results than an operation which removes the tumor more completely than in the nature of things can be done by them. I would, therefore, reserve the endovesical method for the small single benign neoplasms having well-marked stems and would apply to all other benign tumors of the bladder the intraperitoneal method of excision proposed and performed by Harrington, of Boston, and by Rydygier, and recently revived by the Mayos, of Rochester.

Dr. C. L. Scudder: I should like to say one word regarding Dr. Watson's attitude toward total cystectomy for evident malignant disease of the bladder.

It seems to me that it is a most reasonable view that if malignant disease exists in some part of the bladder, this disease may be removed without removing the whole bladder. Dr. Watson, as I understand him, would substitute for partial cystectomy a total cystectomy with a nephrostomy.

I believe that there is a large number of cases of carcinoma of the bladder in which the disease is so localized in some part of the bladder wall that it is possible to excise or resect the disease safely and retain a portion of the bladder *in situ*. The perfection in the technic of the transperitoneal approach to the bladder has rendered the operation of partial cystectomy a safe and effective procedure. I believe that the Rydygier-Harrington transperitoneal approach to the bladder will take from the group of cases to which a total cystectomy formerly was applicable many cases for a partial cystectomy.

Dr. Hugh Cabot: The tendency of this discussion has been to lay stress upon the seriousness of the condition and the unfavorable prognosis. In looking over the statistics of foreign observers I find that their experience is by no means so unfavorable. Thus Zuckerkandl reports that in the last six and one-half years he has had 72% without recurrence. Bosch reports 31 cases, of which 12 were benign, 15 malignant and 4 doubtful. Of the benign cases 1 was operated upon by the endovesical method, 2 were not operated upon and were well respectively sixteen and seven years later. Of the 9 cases operated upon, 7 were followed, and of these 4 were without recurrence. Of the malignant and doubtful cases, 12 were operated upon. Of those not operated upon, 5 died, respectively one-half, four and one-half, three, three and fifteen years after operation. One is still alive three years later. Of the patients operated upon, 3 died as a result of the operation. The remaining 6 died respectively six, two, fifteen, fifteen, ten and five years after operation. Three are still alive after eighteen, fourteen and nine years. This is certainly a much better showing than we often hear of and tends to make the outlook less dark.

In regard to the methods of operating, there are certain points that I want to speak of. I think that there is some danger in the advice just given to sponge the bladder freely, as in this way portions of the tumor may be, and I believe are, disseminated to other portions of the bladder. The method, proposed I think by Hagner, of lining the bladder with protective tissue during operation seems to me worth trying. Every

means should be taken to limit the bleeding as much as possible by the placing of preliminary sutures and rapid removal of the tumor when once the dissection is begun.

The question of drainage is an important one. It has been clearly shown that infection increases the rapidity of growth and probably favors recurrence. Drainage of the bladder tends to infection, particularly if that drainage be by the urethra. It is highly desirable to close these bladders as completely as possible, and if the bleeding has been thoroughly stopped it may be possible to dispense entirely with drainage. Schmidt, of Chicago, has laid particular stress on this point and advises the use of gas and oxygen anesthesia so that the recovery from the anesthetic may be rapid and the patients may regain control of their bladders early.

While the suprapubic route is at present the method of election for the majority of cases, I have no doubt that endovesical operating has a future. If the growths when first seen are of considerable size, open incision is probably the best method. Frequently when first seen the cases are well developed, but as the knowledge of cystoscopy increases, we shall get them earlier. Endovesical operating seems to me to be most favorable for the cases of multiple recurrences and single small recurrence. For these, repeated suprapubic operations are clearly undesirable. Some of the recurrences are frequently overlooked, and it is on the whole an unsatisfactory business. For these cases approach through the bladder seems to me highly desirable. At the present time we have the choice of two procedures, either the so-called operating cystoscope, of which there are several patterns, or the use of high-frequency current, as suggested by Keyes. If this latter method fulfills its promise, it will be of great value.

DR. A. L. CHUTE: It seems to me from my personal experience that Dr. Watson's advice is very important. In looking over my cases I find I have notes on 18 cases of malignant disease of the bladder. These were growths that infiltrated the bladder wall with one exception. This last was of the multiple papilloma type, but was found to be carcinoma on microscopical examination. Of these 18 cases, 15 have died; of the remaining 3, 1 was operated upon in July; another woman was operated upon a short time ago, but the mass was not removed; the other patient, the man with the multiple papillomatous growths that were reputed to be carcinoma, was operated upon two years ago. The growths were curetted through a suprapubic incision; he has shown no recurrence up to date.

In regard to Dr. Cabot's advice about protecting the bladder surface with gauze during operation, I believe that the method advised by some of the European surgeons, of swabbing it out with alcohol or iodine after operation, is more feasible.

One point not touched upon offers some hope to my mind, and that is that with further study we may come to recognize cystoscopically the precancerous stage of bladder growths. In many of the cases I have seen there has been a long history of bladder disturbance, showing that there must have been such a stage. In the case of one man who died of a massive infiltrating growth, the bladder trouble began with what was probably a typhoid cystitis that dated back to the time of the Civil War. A woman that I remember very well had a history of a stubborn cystitis that antedated the appearance of her carcinoma by many years. I believe it is perfectly possible that we may in time come to recognize cystoscopically the conditions that are forerunners of cancer of the bladder and by their removal forestall the malignant process itself.

DR. J. D. BARNEY: I should like to mention a case I saw at the clinic at the Massachusetts General Hospital. A man, thirty-five years old, who was operated on a year ago for two papillomata, one near each ureteral orifice. He came in the other day; had gained 60 lb.; had absolutely clear urine; no symptoms. Opposite the cystoscope as it went into the bladder there was a little tumor, perhaps the size of a bean, hanging down by a stem from the wall of the bladder posterior to the fundus. It is a case that would lend itself to the intravesical operation. It may be the result of dissemination at the time of operation and it also demonstrates the insidiousness of these papillomata, which may exist without any symptoms whatever.

DR. L. DAVIS: It seems to me that for a great many of these papillomatous growths the transperitoneal operation is not indicated. I cannot help thinking that it is considerably more dangerous than an ordinary suprapubic. I think it is a valuable operation where the tumor is inaccessible, or is sessile, or shows signs of infiltration. In the ordinary case I like to make the usual suprapubic incision; if the growth has a pedicle and is movable, it can readily be pulled up into view and excised with a good margin of mucous membrane. On the other hand, if you find the tumor is solidly attached, or has a broad, firm base, it is a simple matter to enlarge the wound into the peritoneal cavity and split the bladder in the median line. I have done that several times. I believe in suprapubic drainage of the bladder in all cases.

DR. P. THORNDIKE: Dr. Hagner, of Washington, is one of the younger operators who is insistent on the point of handling these tumor masses as little as possible. He takes every precaution against the dissemination of the disease as a result of the operator's technic. He has a scheme of operating with the aid of a cystoscope in the bladder, about which Dr. Cabot will tell us.

DR. H. CABOT: He makes the ordinary suprapubic incision down to the bladder, which is distended and exposed as fully as possible. Then, while looking through the cystoscope, needles or sutures are passed down through the bladder wall, thus outlining a good margin of healthy tissue about the growth. All the tissue between these points is then excised; in this way the handling of the tumor mass is avoided. Of course, this method is applicable to growths in the superior portion of the bladder only.

## WESTERN SURGICAL ASSOCIATION.

### TWENTIETH ANNUAL MEETING, HELD AT CHICAGO, ILL., DEC. 19 AND 20, 1910.

[Concluded from No. 6, p. 198.]

### INTUSSUSCEPTION WITH SPECIAL REFERENCE TO ADULTS.

DR. ELLSWORTH ELIOT, of New York City, stated that intussusception in adults was of more importance than previous study would indicate. The causes in children were largely confined to acute intestinal disturbances, while in adults they were more varied. The rarer causes were foreign bodies and parasites, less so ulceration from diarrheal diseases, tuberculosis, fecal masses, etc. A more common cause was trauma, especially severe muscular effort. Meckel's diverticulum was more common in children. The most frequent cause was a tumor, especially the benign polyp, with constricted base. The clinical course in children was fairly characteristic, while that in adults varied from one most acute to the very chronic. In his paper he tabulated three hundred cases arranged with reference to etiology and the clinical picture. Of the individual symptoms there was a great variety. Con-

stipation was the rule, but normal stool or diarrhea might occur. Blood or mucus in the stools was less frequent and usually signified a tumor. A tumor varying in size and shape, especially during the attacks of pain, and changing its position along the course of the colon, was characteristic. The tumor appeared first in the right lower quadrant, but should be looked for in the pelvis or in a position covered by the liver or spleen. Distention, general or focal, was variable. The course in the attack was usually very severe, especially in these cases with Meckel's diverticulum. In the protracted cases the natural processes might cause sloughing of the intussusceptum which was passed by rectum. Of these, forty-three cases were collected. Hope for such relief should not encourage conservative measures of treatment, for in usually less than eighteen months secondary obstruction occurred. He suggested, therefore, that after the acute symptoms had disappeared lateral anastomosis be done, connecting the bowel above with that below the affected portion. Treatment should in most cases be radical. With conservative measures complete reduction was never certain; recurrence was likely and the initial manipulation lowered the resistance to subsequent operation. Reduction in the first twenty-four hours was accomplished by combined expression and contraction in from ten to fifteen minutes, reduction by either alone being dangerous. Recurrence was avoided by anchorage of the cecum to the abdominal wall, by plication of the mesentery or by long longitudinal endoplication of the cecum along the anterior longitudinal muscular band. Gangrenous intussusceptum and intussuscipiens demanded resection followed by anastomosis or temporary enterostomy. A viable sheath might be split along longitudinally and through this the intussusceptum resected. Temporizing measures were entero-anastomosis and artificial anus. The procedure of choice was to gently reduce as far as possible and then resect. Complete reduction followed by resection was employed only where a tumor or the like was concerned.

He reported two cases; one in a male, aged forty. Following a history of severe cramps three months previously there was an acute attack lasting twenty-four hours with pain, vomiting, abdominal tumor, one normal stool, and blood in the rectum. Examination showed distended loops of the intestine. At operation there was an enteric invagination with a polyp the size of an English walnut near the apex. Recovery after resection. The second case was a female, aged sixty-seven, who had epigastric pain four months previous to operation; a clear interval until three weeks and then a recurrence sustained with a tumor in the region of the transverse colon. A high enema reduced the tumor, but obtained very little feces. There was no obstruction. Operation was delayed because of lack of symptoms and to increase her strength. Operation showed an ileocolic invagination with a polyp at the apex. Recovery took place after partial reduction, followed by resection.

### PRESIDENT'S ADDRESS.

Dr. John P. Lord, of Omaha, Neb., greatly deplored the giving of commissions and dividing fees, and said that realizing as he did that the practice of fee division, secret division, joint fees, commissions, graft and possibly money under false pretenses, was increasing at an alarming rate among the younger element, and that in many cities and towns it was the usual thing, he undertook to arouse the members from their seeming lethargy. Teachers and hospital surgeons, as a rule, were established in their respective communities, and had not felt the force of this evil to so great a degree as to compel action. Those who followed would feel it keenly. Many young men were wrestling with this moral problem and would yield to the general trend of practice unless some aroused moral force within the profession or the effect of publicity checkmated this menace to professional honor, dignity, common honesty and decency. He agreed with those who favored publicity as the speediest and most effective remedy. Then, too, they needed some Roosevelts to keep up a rapid fire attack upon this dishonest practice, and they should maintain a professional and public sentiment against any countenance of graft. The practitioners who had for years adhered to an inelastic fee bill found themselves with their financial wings clipped, and unable to rise above the level of customary fees. The specialist was something of a law unto himself and most often got what he asked. These practitioners, therefore, availed themselves of the specialist's faculty of fee getting and asking to add a sum for them, as the people would object to paying them a proper amount.

The medical schools had been remiss in their ethical instruction to students. The subject had been eschewed in some faculties for fear of engendering feeling, developing strife and endangering the integrity of the organization. The same silence had prevailed in medical societies because it might cost something to speak. Students were now without the close contact that was enjoyed in the days of the preceptors, whereas they now needed more of the moral and ethical side than ever before.

There had already been more harm done than could be overcome for a generation. Delayed action meant more sacrifice. The organized profession should busy itself in reformation and take its stand in the medical colleges, hospitals and societies, and as individuals and organizations educate the public and reform their own members. The most hopeful view might be taken of the result. Any practice which even smacked of graft or of obtaining money under false pretenses could not endure before a righteous public opinion. Nor would it continue in a profession which had cherished ideals from Hippocrates and the whole line of medical saints, religiously followed by the vast majority during all the ages of the history of medicine.

### INTESTINAL OBSTRUCTION DUE TO KINKS AND ADHESIONS OF THE TERMINAL ILEUM.

Dr. Charles H. Mayo, of Rochester, Minn., stated the stomach suffered from many reflex conditions; only one patient in ten with gastric symptoms showed actual lesions. Many bowel conditions, as obstruction, appendiceal concretions, simulated symptoms of ulcer. The development of the mid-intestine included from below the common duct to and including the part of the transverse colon. Ten inches of the ileum was pelvic, was originally fixed to the cecum, and becomes detached at first except for a lateral opening. When this failed to take place, obstruction was more liable to occur. In extensive appendiceal operations in cases with obscure symptoms, Mr. Lane had noted an intestinal kink near the ileocecal valve. He believed this to cause obstruction, often non-inflammatory, and probably resulting from traction of the loaded cecum to the pelvis. The symptoms often simulated those of appendicitis, ulcer and various forms of constipation. They had seen many cases of this nature, both of inflammatory and non-inflammatory origin, and producing reflex symptoms. Therefore, with the present increased facilities for intestinal exploration, the four terminal inches of the ileum should be examined when possible in obscure cases of digestive disturbance.

THE SELECTION OF OPERATION FOR INGUINAL HERNIA.

DR. ARCHIBALD MACLAREN and DR. HARRY P. RITCHIE, of St. Paul, Minn., gave the abridged records of 105 anesthesias showing 123 operations in 97 individuals. The greater number had come during the period of active life, and because of the occurrence of new symptoms or the failure of the truss to retain the hernia. No extraordinary measures, such as filigrees, flaps of the recti, were found necessary to obtain satisfactory repair. During the first decade, the operation without the most positive indications was often questioned. It was no odd experience to have the truss obliterate the sac, and when recurrence did come it would usually result in a less complicated form of hernia. During the second decade and beyond their advice was positive, as the presence of the hernia was then permanent. Two deaths had occurred, both from strangulated hernia. The total number of strangulations was 8; 3 of these were in the third decade and the remaining 5 in the sixth and seventh. Of the complications of convalescence, 7 cases had notes of wound infection, only 1 of which was severe. All cases suffering an inflammation to any degree were instructed particularly as to the possibility of recurrence. The appendix had been removed twenty-six times at the same time as the herniotomy, usually through a buttonhole in the internal oblique muscle. In one case a herniotomy and a cholecystectomy were done at the same time. Eighteen cases were operated upon for a double hernia. They had as easy a convalescence and there was no reason why the side opposite should not be investigated and a hernia in its inception cured. There was a record of 6 relapses, 2 of which were in women. The problem of the disposition of the wound ligaments was unimportant in relation to the cure of the hernia. Here the operation should be called a herniotomy and was not to be placed to the credit or discredit of any of the well-known methods. Of the 98 operations on men, there was one Halstead with cure, 55 Bassini's with one return, and 42 Fergusons with three returns. Previous to 1905 there were 2 cases in which from their description the cord was not displaced, but in all others (34 in number), a Bassini was done. One relapse had occurred and had been reoperated upon, but the remembrance of the technic of the first operation was such that the failure was ascribed to this rather than to the principle. Beginning in February, 1905, they were influenced in the use of the Ferguson operation. This was done as a routine operation forty-two times. The three returns had all been repaired, and the conditions found were identical in each case. There was no sign of the old hernia, but a new one had formed at the most dependent part of the canal. The sac came directly through to the inner side of the cord. When the sac was removed, it was easily demonstrated that if the tissues were replaced as before, that this defect would be uncorrected and there seemed to be no reason why the sac would not immediately recur. The only possible procedure was the use of the conjoined tendon and the displacement of the cord, thus performing a Bassini. The per cent of their success as to the displacement or non-displacement was in favor of the former. In view of the formation of an entirely new kind of hernia which came without displacement of the cord, and which they were powerless to prevent, it had swung the pendulum back in favor of the Bassini, and our present feeling was that if there was a recurrence, we would call it an operative fault and do it over again.

TYPHOIDAL CHOLECYSTITIS.

DR. JOHN E. SUMMERS, of Omaha, Neb., said that much discussion had taken place as to the mode of invasion of the gall bladder by the typhoid bacilli. According to Chiari, the route of infection was not by ascension from the intestinal tract, but his theory of gall-bladder infection by the typhoid bacillus was, first, the intestine, thence the blood and then the gall bladder.

Dr. Summers reported several cases, one of which was a pure case of typhoidal cholecystitis, the gall-bladder involvement giving symptoms at the beginning of the first relapse. The absence of any obtainable history of gallstones prior to the illness could fairly fix the initiation of the formation of the stone found in the common duct as taking place probably during the first part of the attack. The time from the beginning of the attack to the time of removal of the stone was from April 1 to Aug. 22 — sufficient time for its formation. In so far as he was informed, this was the first case of typhoidal cholecystitis with probable formation of the stone during the attack in which the stone was removed from the common duct. Cultures from the center of the stone were sterile, — a finding which did not negative the origin of the stone as due to typhoidal cholecystitis. Cholecystostomy upon typhoid carriers, he thought, should be done whenever there was evidence of any infection in the gall bladder or ducts. In cases where no signs of inflammation could be found, it might be considered that possibly the nesting-place for the bacilli was in the diverticulum and operation not indicated. There was favorable evidence for the carrying out of cholecystostomy in these dangerous persons.

PLICATION OF THE ANTERIOR BROAD LIGAMENT FOR RETRODISPLACEMENTS.

DR. A. W. ABBOTT, of Minneapolis, said the round ligament was not a natural support of the uterus, while the broad ligament was. Suture of the broad ligament just below the round ligament made an efficient support and conformed to the natural anatomical requirements. The operation was rapidly done. The failures were less than by other methods, and there was less pain after the operation.

ABDOMINAL EXCLUSION OF THE FUNDUS IN COMPLETE PROCIDENTIA.

DR. JOSEPH RILUS EASTMAN, of Indianapolis, Ind., stated that the question as to whether the uterus in its normal state was suspended by its liagments and thus secured in position or was supported or upheld by the muscles and fasciæ of the pelvic floor, the ligaments serving only as guides, became in the presence of complete procidentia a question of lessened importance, for in these extreme cases hysterectomy or the abdominal operation with fixation was absolutely necessary, in addition to a thorough repair of the vaginal supports, with amputation of the elongated portio vaginalis and curettage. The fixation here referred to was not a classical one by which the fundus was sutured to the abdominal aponeurosis, but one in which the uterine fundus was drawn quite through the abdominal wound, the entire fundus being excluded and secured with a large transfixing pin. The pin was allowed to remain in place for two and one-half weeks. It was not a rare experience to find a few months after a simple fixation the abdominal wall sunken in at the site of fixation and the prolapsus returning. In exeluding the fundus in cases of complete procidentia, the aim had been to fix the uterus higher than could be done by an ordinary fixation, to provide for firm attachment of the peritoneum, muscles and aponeurosis at a low level upon the anterior, posterior and lateral aspects of the uterine body. All of the layers of the abdominal coverings were drawn snugly around the uterine body and

sutured to that organ anteriorly, posteriorly and laterally. The transfixing pin in the three cases reported was passed deeply enough to exclude the entire fundus. Two patients thus operated, though they were past fifty years of age, had not passed the menopause, and in one of these the uterine appendages were removed and in the other the tubes were divided and the peritoneal screen suggested by Ries interposed. In all three cases the abdominal operation was preceded by curettage, amputation of the cervix, anterior and posterior colporrhaphy and perineorrhaphy. In each case the fundus had been covered over with skin growing centrally from the periphery within two or three weeks. Owing to the firmness of the attachment and the elevation given by the transfixing pin, the possibility of sagging or detachment was minimized. The method offered the greatest possible uterine surface for fixation in the abdominal coverings. It made possible reduction of deformities caused by extreme relaxation as a simple intra-abdominal fixation could not do because the uterus was drawn higher and the firmer fixation prevented a yielding ligamentous fixation or a complete sundering of the attached structures, an accident which was perhaps less rare than was imagined.

LESIONS OF THE HIP-JOINT AND THEIR MANAGEMENT.

Dr. John B. Murphy, of Chicago, spoke of the elements in connection with lesions of the hip-joint and of an important principle governing the final results obtained in pathological conditions and in fractures. In his recent work in connection with fractures, in attaching the upper end of the femur frequently he found a definite condition occurring, namely, absorption of the neck. No such absorption took place in fractures in any other part of the body. It never occurred when there was a fracture in the upper end of the humerus. This absorption was due, he believed, to the primary condition of the circulation in the neck of the femur. When there was a fracture, a lesion or disease, the repair of that lesion depended more upon the condition of the circulation in the neighborhood than on any other one thing, taking into account always the regenerative potency of the individual structure. In fractures that occurred close to the head of the femur there was practically no absorption at all; no fatty degeneration, no breaking down, no liquefaction of bone. When a fracture occurred close to the base of the neck and there was attachment to the trochanter, it did not tear off the blood vessels in the capsule inside. That capsule went down and out and back in again, and the blood vessels went in a proximal and distal direction, but the bone for a certain distance in a great majority of cases was absorbed. If there was a fracture of the neck of the femur which did not tear off the blood vessels, then the portion between the trochanter and the head remained, and it was capable not only of revascularization, but of ossification, regeneration and of sustaining the neck.

In the management of fractures of the femur, it had been the custom to dress them with a straight external splint. What did this do? It tended to shortening by shortening of the adductors, and shortening of the gluteal group of muscles attached to the trochanter, and not only that, the tendency of the adductors was to draw the limb inward, and there was shortening in that position. What the surgeon wished to do was to reduce to a minimum contraction during the process of absorption of this portion of the head of the femur, so that when absorption had taken place and the tissues were ready for regeneration, it was essential to have the parts in apposition. They could be best maintained in apposition by relaxing the group of muscles which did so much to cause shortening by putting on extension. The ambulatory management of tuberculosis of the head of the femur was wrong in his opinion. An ambulatory apparatus was applied to prevent motion, and as far as it inhibited motion in a joint it was valuable. But what should it be applied for? To prevent pressure on the inflamed part. When the products of infection were held under tension there was rapid destruction of tissue. This tension should be relieved. The first main principle should be to separate these articular surfaces by an extension apparatus, and then build up the patient to stimulate the process of repair.

Dr. B. B. Davis, of Omaha, Neb., read a paper in which he spoke of Meckel's diverticulum as a cause of ileus.

OFFICERS.

President, Dr. Amos W. Abbott, Minneapolis, Minn.; First Vice-President, Dr. A. E. Halstead, Chicago, Ill.; Second Vice-President, Dr. William Frick, of Kansas City, Mo.; Secretary-Treasurer, Dr. Arthur T. Mann, Minneapolis, Minn.

Kansas City, Mo., was selected as the place for holding the next annual meeting, and time, Dec. 18 and 19, 1911.

## Book Reviews.

*The Working People.* Their Health and How to Protect it. By M. G. Overlock, M.D. Worcester, Mass: The Blanchard Press. 1910.

This well-meant volume, whose author's titles are arranged in a novel Pindaric variation of the fashionable inverted truncated pyramid, contains an interesting assortment of sound advise, sagacious truisms, and some harmless fallacies. Its style is dogmatic but probably well adapted to the "plain people" to whom it is addressed. On the whole, the effect of the book is good and it will doubtless do good if read by those for whom it is intended.

*Otitic Cerebellar Abscess.* By Heinrich Neumann. Translated by Richard Lake, F.R.C.S. 8vo. Pp. 156. London: H. K. Lewis. 1909.

This little volume is a careful study of otitic cerebellar abscess, based partly on former statistics collected by the author and partly on a new collection of 156 cases. Middle-ear suppuration, associated with cholesteatoma, is the chief etiological factor. The clinical picture often shows few definite characteristics, and many cases run a latent course. The chief focal symptoms are those due to lesion of Deiter's nucleus, — vestibular nystagmus, vertigo and vestibular ataxia; or of the sensory tracts — hemiparesis and hemi-ataxia. The researches of Bárány receive full consideration. About one fourth of the cases are cured by operation. Operation from the middle ear is preferred to opening the abscess through the skull, as extirpating the primary focus of suppuration. The work is a valuable and important study of cerebellar abscess. The style of the translation is somewhat involved, and the book lacks any index, but it will prove of much assistance both to the aurist and the neurologist.

THE BOSTON

# Medical and Surgical Journal.

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101 TREMONT STREET, BOSTON, MASS.

## FACTORY AND SCHOOL HYGIENE.

THE third annual report of the Massachusetts State Board of Health upon the work of the state inspectors of health shows by its clear presentation of facts relating to the hygiene of factories and schoolhouses that the inspectors have accomplished a vast amount of good both in a practical and educational way.

A notable feature of the report is the description of the actual results obtained from the inspection of factories. In all establishments where workers were found unprotected against irritating dusts arising from metal or emery polishing, adequate protective provisions were insisted upon. Dirty windows and dirty interiors were cleaned, with such marked improvement in the light that workmen employed at processes requiring attention to detail appreciated the changes and performed their work better and more easily. Ventilating provisions were altered even to the extent of installing a new artificial ventilating system in order to obtain adequate ventilation of workrooms. Drinking water supplies were made safe, and tanks from which the water was furnished cleaned and so altered as to be accessible for cleaning. Radical improvements were made in toilet room conditions, resulting in the expenditure by manufacturers of many thousands of dollars, and in some instances in the employment of a man for the sole purpose of keeping the closets in a sanitary condition.

Of equal importance is the educational work done both among employers and employees. It appears that the workers frequently fail to appreciate the dangers to which they are exposed, hence are indifferent and oftentimes even opposed to the use of protective appliances.

Another important feature of the report is the literature contributed to the subject of occupational hygiene; for example, the hygiene of candy and chocolate factories, of cigar factories, of metal working establishments and of jewelry making and its allied industries.

During the period covered by the report some 2,800 industrial establishments were thoroughly inspected, and about 500 reinspected. Of some 600 objectionable conditions called to the attention of manufacturers, more than 400 were satisfactorily remedied. Of nearly 14,000 minors seen and questioned, 945 were examined physically and 181 found with some abnormal condition. While inquiring concerning the health of the minors in one factory the state inspector of health discovered signs of beginning tuberculosis in 11 minors. The inspector reported the cases to both state and local health authorities and assisted the local board in placing the minors under treatment, thereby insuring proper care and protection to the public.

Such work as the health inspectors are accomplishing in our industrial establishments emphasises the need of furthering the study of factory and occupational hygiene throughout the country on such a scientific basis as that now well established by the Massachusetts State Board of Health, and of including in the investigation of the prevalence of communicable diseases and dangerous influences within the factory, inquiries concerning the health of adults as well as minors. In this work the position of the health inspectors is unique, for they are constantly in touch with the prevalence of diseases in their respective districts and, further, with practicing physicians whose assistance they frequently get not only concerning communicable but occupational diseases. It has thus remained for the state of Massachusetts, the state which established the first State Board of Health in this country, to lead all other states in the recognition of the fact that the inspection of industrial establishments by well-trained medical men under the supervision of a board whose duty it is to study the health of the community in its broadest sense — the State Board of Health — means the promotion of public health. The factory cannot be divorced from the community, especially in the large industrial centers where the community is composed largely of factory workers. As the report makes evident, it is of the greatest importance in order to guard the public health that the physicians who are familiar with the hygiene of towns and cities and are constantly investigating tuberculosis and other communi-

cable diseases shall remedy the unsanitary conditions in our factories and do all within their power to prevent the spread of diseases in these establishments and, by virtue of their knowledge of outside unhygienic influences, study thoroughly the possible effects of industry upon health.

The investigation of schoolhouse conditions made with the view of better protecting the health of the pupils discloses an equal need of authority to improve the hygiene of these buildings. Some 250 schoolhouses were carefully examined and reported upon, but the State Board of Health, owing to statute limitations, can only investigate and report to the Legislature the results of their findings, so that the efforts of the board to guard against ill-ventilated or overcrowded schoolrooms depend at present upon the willingness of the community to accept the facts disclosed and to act upon them. While in a number of instances new schoolhouses have been constructed as the result of the examinations made by the health inspectors, the State Board of Health are not authorised to require changes in the sanitation of old buildings.

## PROPOSED HOMŒOPATHIC SANATORIA FOR CONSUMPTIVES.

There was introduced last month before the State Legislature a resolve accompanying a petition of the Massachusetts Homœopathic Medical Society for legislation to provide for the establishment of a homeopathic sanatorium for tubercular patients. The provisions of this proposed measure are: First, that an appropriation of $100,000 be made "for creating a new sanatorium for tubercular patients to be situated in the eastern part of Massachusetts, that shall provide homeopathic medical treatment for all patients who desire it by such number of homeopathic physicians as may be necessary, and which shall be under the direction, management and administration of homeopaths"; second, that the already existing sanatorium at North Reading be also "placed under the direction, management and administration of homeopaths"; third, that the number of trustees on the board of trustees of the Massachusetts hospitals for consumptives be increased from seven to ten, "of which number there shall be at least three homeopathic physicians, members of the Massachusetts Homœopathic Medical Society." The need or desirability of such important changes deserves careful investigation.

At present the situation as regards representation of homeopaths in the state hospitals for tuberculosis is as follows: In the sanatorium at Rutland, which has 350 beds, there are two services of equal size, to which patients are assigned alternately, and of which one is administered by homeopaths, the other by regular physicians. No patient at this institution has ever made a request for homeopathic treatment, and as a matter of fact the treatment given on the two services is absolutely identical. In the three other state sanatoria, at Lakeville, Westfield and North Reading, which have 150 beds each, all the medical assistants have hitherto been regular physicians, but from no patient at these institutions has request ever been made for homeopathic treatment. Last fall representation at these hospitals was requested by the homeopaths, and the board of trustees then agreed to appoint homeopathic medical assistants at all of them, and requested nominations and applications for such appointment. Since that time no nomination and only one such application has been made, the latter from a man obviously unfit to serve in any medical capacity.

In view of these facts, it does not seem that the present situation is one of injustice to homeopaths, either physicians or patients, since they have, or are to have, under the existing arrangement, representation at the several institutions. Under the proposed measure, they ask to have two sanatoria placed under their entire control, representing, with their share of beds at Rutland, one half the public provision for consumptives in the state. But there is no evidence that this request represents a desire of the community. Not only has there been no request for homeopathic treatment from any patient at these institutions, but of 298 physicians making request for admission of patients to them last year, only 27 were homeopaths. Moreover, there is in the state only one private provision for the homeopathic treatment of consumptives, — in some cottages maintained at Rutland. Were there a genuine popular demand for such treatment, there would be other such private institutions, there would be requests for homeopathic treatment at the state sanatoria, there would be applications for homeopathic medical appointments at these sanatoria.

The query, furthermore, may pertinently be made, "What is the homeopathic treatment of tuberculosis, and wherein does it differ from that given by regular physicians?" We have seen that the methods of treatment are identical on the two services at Rutland. Consumption is a

disease treated not by drugs, but by diet and hygiene, and the truth of hygiene is everywhere the same. Is it proposed to administer food and fresh air in homeopathic doses? If there were any reason for the establishment of an exclusively homeopathic hospital for tuberculosis, there would be the same reason for establishing similar institutions for representatives of any other exclusive dogma.

We do not believe that the present situation is unfair to the homeopaths, or that their request for legislation represents a popular demand or is based on a genuine necessity, and we fail to see on what grounds the proposed bill is to be recommended.

## INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY.

PRELIMINARY announcement is at hand of the Fifteenth International Congress on Hygiene and Demography, which it is proposed to hold in 1912 at Washington, D. C. The Fourteenth Congress, in 1907, met at Berlin, and the coming session would be the first to be held outside of Europe. The responsibility for its conduct has been assumed by the United States Department of State, and official invitation to send delegates has been accepted by twenty foreign governments. Dr. Henry P. Walcott, of Cambridge, Mass., is to be president of the congress, and Dr. William H. Welch, of Baltimore, Md., chairman of the executive committee. There will be nine sections devoted to the following subjects: Hygienic microbiology and parasitology; dietetic hygiene and hygienic physiology; hygiene of infancy and childhood and school hygiene; industrial and occupational hygiene; control of infectious diseases; state and municipal hygiene; hygiene of traffic and transportation; tropical, military and naval hygiene; demography.

The special purposes of this congress, as stated in the preliminary announcement, are: First, to know and to make known our sanitary achievements in the Canal Zone, in Cuba, in Porto Rico, in the Philippines and in Hawaii; second, to strengthen and harmonize the efforts of federal, state and municipal governments in relation to public health and vital statistics; third, to correlate and economize the activities of many unofficial organizations dealing with questions of public health.

The estimated total cost of the congress is $100,000, of which probably $60,000 will be furnished by the United States government. To secure assurance of the remaining $40,000, the committee on organization is making this early announcement with the request for subscriptions for advance membership from physicians and others interested in the purposes of the congress. This request should meet with a generous response in order to insure the success of an undertaking which not only should be a credit to this country, but should also result in valuable contributions to the science of hygiene and its practical application.

## PREPARATION OF ANTI-MENINGITIS SERUM.

IN accordance with an announcement made last summer, the Rockefeller Institute for Medical Research gives notice this week that it has discontinued the general distribution of anti-meningitis serum and will devote to other lines of investigation the funds hitherto employed for this purpose. The serum, whose effectiveness in that form of meningitis due to the diplococcus intracellularis of Weichselbaum may now be regarded as established, must henceforth be prepared, like vaccine and diphtheria antitoxin, by public health authorities and commercial establishments. At present the Board of Health of the City of New York has undertaken its regular production and local distribution. Similar provision will probably be made by boards of health in other localities.

This action of the Rockefeller Institute marks the closing step in a very brilliant piece of scientific research which has contributed to practical medicine another valuable agent in the conflict against disease. Statistics indicate that early use of the serum in bacteriologically authenticated cases has reduced the mortality of this form of meningitis at least 65%.

## LARGE AND SMALL FAMILIES.

AT the joint meeting of the Twentieth Century Club and the Boston Milk and Baby Hygiene Association, to which reference is made in another column, there seems to have been some difference of opinion between President Eliot and Dr. J. L. Morse relative to the desirability of encouraging large families among the poor. Dr. Eliot holds that early matrimony and the begetting of many children is nature's law, the violation of which has produced many of the evils of society. Dr. Morse, on the contrary, cites the proposition, recognised by the thrifty but not by the improvident, that no family should produce

more offspring than it can properly care for. This principle applied would make the size of families proportionate to wealth. Mr. Eliot's doctrine is doubtless a wholesome reaction from the pernicious dogma of the Neo-Malthusians. The trouble is that each appeals to the wrong class of persons. What is really needed in society is not more children, but more children of the right sort. Unfortunately it is often as difficult to make the fit procreate as it is to prevent the unfit from doing so. Probably in spite of all reformers, nature will continue to solve the problem after the method of the centuries.

## MEDICAL NOTES.

Poliomyelitis in Oregon. — It is stated that during the past year acute poliomyelitis has been extensively prevalent in Oregon. During the fall of 1910, 94 cases and 12 deaths of the disease were reported to the State Board of Health, but these figures probably represent only a portion of the actual morbidity and mortality.

Chimerical Expectations from Radium. — The daily press has lately contained items relative to the marvelous rejuvenating effects of intravenous injections of radium, and to the possibility of its affording an inexhaustible supply of heat and energy to the world. However future chemical discoveries in regard to radium and allied elements may lead to upsetting or revision of the atomic theory, it is needless to say that such expectations are as chimerical as the philosopher's stone or the *elixir vitae*.

An Undaunted Centenarian. — Foster J. Foster, of Kansas City, grandson of a former chief of the Seneca Indians, is alleged to have been born in 1804 on the site of Buffalo, N. Y., then an Indian village. For many years he served as a government scout and secret service agent. At present he is reported as engaged in litigation over a mining claim in Montana, and is said to have announced that, in the event of his failing to recover the property, he intends to go into business and make an entirely fresh start in life. Such unabated zeal and perseverance would be creditable in a person of half his reputed age.

A Precocious Great-Grandmother. — In the issue of the Journal for Jan. 26, we noted that Victor Beyson, of Spencer, N. C., had just become a grandfather at the precocious age of thirty-three. Report from Baltimore now states that Mrs. Addie Ward, of Mecklenburg County, North Carolina, became a great-grandmother in April, 1910, at the age of forty-five. Mrs. Ward was born in December, 1864. Her oldest daughter, now Mrs. A. J. Lawing, was born in 1878. Mrs. Lawing's oldest daughter, now Mrs. W. A. Adams, was born in 1895. And Mrs. Adams's first child, also a daughter, was born in 1910. Precocious matrimony seems to be hereditary in the female line of this family.

Psychic Healing and Tuberculosis. — Dr. J. L. Pomeroy, in a paper on "Psychic Healing and Tuberculosis" in the *Journal of the Outdoor Life*, says: "One of the saddest things that has come to my notice is that of a girl cured of tuberculosis trying to convince her Christian Science mother that her brother is in the first stages of tuberculosis. No matter how much internal rest is produced by a method, it must not injure our reasoning power in regard to our fellow beings. In this we physicians should have a word to say."

### BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Feb. 7, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 49, scarlatina 42, typhoid fever 5, measles 110, smallpox 0, tuberculosis 75.

The death-rate of the reported deaths for the week ending Feb. 7, 1911, was 17.71.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, Feb. 11, 1911, was 260, against 244 the corresponding week of last year, showing an increase of 16 deaths, and making the death-rate for the week, 19.68. Of this number 139 were males and 121 were females; 251 were white and 9 colored; 153 were born in the United States, 102 in foreign countries and 5 unknown; 60 were of American parentage, 174 of foreign parentage and 26 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 45 cases and 2 deaths; scarlatina, 49 cases and 2 deaths; typhoid fever, 6 cases and 1 death; measles, 72 cases and 0 deaths; tuberculosis, 91 cases and 24 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 57, whooping cough 3, heart disease 29, bronchitis 5. There were 16 deaths from violent causes. The number of children who died under one year was 42; the number under five years, 60. The number of persons who died over sixty years of age was 72. The deaths in public institutions were 102.

SEIZURE OF FROZEN EGGS. — Another seizure of frozen eggs was made in Boston last week by the United States deputy marshal. The shipment, which consisted of 10½ cases containing a total of 3,400 dozen eggs shelled and canned, was made from a Chicago firm to its local office.

DENTAL INSPECTION OF SCHOOL CHILDREN AT DEDHAM. — It is reported that the school committee of Dedham, Mass., has accepted the recent offer of a number of local dentists to give each a half-day every month to free dental inspection of the public school children of the town.

DIRECTOR OF MAINE GENERAL HOSPITAL. — Report from Augusta, Me., announces the nomination, on Feb. 7, of James C. Hamlen as director of the Maine General Hospital at Portland, to succeed Franklin A. Wilson, of Bangor, who recently resigned.

NEW DIRECTOR OF HOLY GHOST HOSPITAL. — At a meeting of the directors of the Holy Ghost Hospital for Incurables, held in Boston last week, Mrs. Curtis Guild, Jr., was elected a member of the board to fill the vacancy caused by the death of Mr. Carstein, of Cambridge.

TWO BEQUESTS TO HOSPITALS. — The will of the late Anna C. George, of Haverhill, Mass., filed last week for probate, contains a bequest of $1,000 to the Hale Hospital, at Haverhill.

In the will of the late Caleb S. Hollis, of Braintree, Mass., allowed in probate last week at the Norfolk Probate Court, the Quincy (Mass.) City Hospital is named as residuary legatee, and will probably receive a considerable sum from the estate.

INFANT MORTALITY IN MILL TOWNS. — At a joint meeting of the Twentieth Century Club and the Boston Milk and Baby Hygiene Association, held on Feb. 10, to discuss the prevention of infant mortality, addresses were made by President Eliot, by Dr. John L. Morse and by Mr. Walter Kruesi. The latter commented especially on the exceptionally high infantile death-rate in manufacturing and mill towns, such as Fall River, Lowell and Salem.

REPORT OF ST. MONICA'S HOME. — The recently published annual report of St. Monica's Home, Roxbury, for the year ended Oct. 30, 1910, shows that during the year forty-three new patients were admitted to the institution. About one third of these were cases of pulmonary tuberculosis. The need of increased accommodation for patients with other chronic diseases could advantageously be met by the purchase and equipment of an adjacent brick building, for which the sum of $3,500 is required. It is earnestly hoped that this amount may be raised by charitable subscription during the coming year.

WORK OF ELLIOT HOSPITAL, MANCHESTER, N. H. — The annual report of the trustees of the Elliot Hospital of Manchester, N. H., shows continual progress in the work of that institution. During the year 1910, 327 patients were treated, a considerably larger number than in any previous year. During that year 29 physicians personally sent patients to the hospital, which demonstrates the wide field of usefulness it is covering. Like most progressive institutions, the hospital is in need of financial aid, since from its opening in 1890 the trustees have been obliged to contend with an annual deficit.

### NEW YORK.

CONVICTIONS FOR SALE OF WOOD ALCOHOL. — On Feb 6, the first convictions in the Federal Courts under the new law forbidding the sale of wood alcohol as a beverage were secured. The accused are three officials of the Empire Rectifying Company of Brooklyn, and by Judge Chatfield, in the United States District Court, they were each fined $250 and sentenced to prison. The terms of imprisonment were respectively, nine, four and three months.

REPORT OF STATE COMMISSIONER IN LUNACY. — The annual report of the State Commission in Lunacy, transmitted to the Legislature on Jan. 31, states that the total number of insane in the state on Sept. 30, 1910, was 32,658. The number in the state hospitals for the insane was 31,606; in the Matteawan and Dannemora hospitals for insane criminals, 1,161; and in licensed private institutions, 1,052. The total number of patients received during the year was 7,063, the net increase for the year in all institutions being 1,119. The report announces that at an early date addresses on the prevention of insanity will be made at the Academy of Medicine, New York, and later in many parts of the state, to be followed by a series of public lectures illustrated with moving pictures depicting the life of the insane and the remedial measures employed in the modern hospitals. Pamphlets will also be issued, informing the public of the avoidable causes of insanity, for distribution to high schools, colleges, church organizations and philanthropic societies.

REPORT OF COMMISSIONER OF HEALTH. — The annual report of the State Commissioner of Health was submitted to the governor on Feb. 6.

Last year 212,795 births were reported, or 10,139 more than in 1909. The city having the highest birth-rate, 32.7, was Dunkirk, and that having the lowest, 11.9, Troy; a condition, it is stated, due in part to incomplete registration. In the latter city 681 more deaths than births were reported. In New York the birth-rate was 27.1. The total number of deaths in the state was 147, and the death-rate was 16.1, the urban and rural rates being the same. The lowest death-rate, 11.8, was in the city of New Rochelle, Westchester County. The reported mortality from tuberculosis was 14,047, or 9.5% of all deaths. Some reduction in the mortality from this disease, however, is noted. For a period of twenty-five years the percentage was 11. In 1909 it was 10, and in 1910, as stated, 9.5. An increase in the deaths from cancer is noted, and the establishment of the proposed hospital in connection with the State Cancer Laboratory at Buffalo is strongly recommended. An increase in the appropriation for the investigation and control of communicable diseases is also urged. "From an economic standpoint alone," the report goes on to say, "it is entirely possible to save thousands of lives and millions of dollars to the state. Our greatest natural resource is the child. In the prevention of infant mortality alone the state could well afford to spend all that it now appropriates for the Department of Health." The report furthermore points out that much of the public health law was enacted thirty years ago, and is, therefore, inadequate for the demands of the present day; and while a large increase in the powers of the department is not advocated, it is argued that sufficient authority should be vested in it to enable it to improve many unsatisfactory conditions. At present the department is empowered to make sanitary investigations, but to a large extent lacks the authority needed to enforce the changes called for.

Reports of Health Department. — The weekly reports of the Health Department show that the mortality in the city during the month of January represented an annual death-rate of 16.54, as against 17.18 in December and 17.54 in January, 1910. The decline in the mortality is doubtless due to the milder weather which prevailed in January, though in the early part of the month there was a sudden and marked increase in the deaths from influenza. Thus, while the number of deaths reported from this cause in the last week of December was 27, in the first week of January the number ran up to 51. By the last week of the month, however, it had declined to 24. Pneumonia was also unusually fatal in the first week of the month, causing 216 deaths, but by the last week the number of deaths was reduced to 114. Among the diseases in which there was a diminished mortality were the following: The weekly average of deaths from typhoid fever decreased from 11.75 in December to 5.5 in January; the weekly average from acute bronchitis, from 25 to 22.25; from pneumonia, from 191.25 to 172.75; from bronchopneumonia, from 119.75 to 107.5; from diarrheal diseases, from 43.5 to 39; from organic heart diseases, from 188.5 to 184.5; from appendicitis and perityphlitis, from 12.75 to 11; and from Bright's disease and acute nephritis, from 125.75 to 123.25. Among the diseases in which there was an augmented fatality were the following: The weekly average of deaths from measles increased from 5 to 7.5; from scarlet fever, from 10 to 14; from whooping cough, from 5.5 to 6.75; from diphtheria and croup, from 25.25 to 29.75; from influenza, from 18.75 to 35.25; from pulmonary tuberculosis, from 170 to 186.5; from cancer, from 69.25 to 71; from apoplexy and softening of the brain, from 25.75 to 36; and from puerperal diseases, including septicemia, from 12.5 to 15.75. The corrected death-rate, excluding non-residents and infants under one week old, was 15.73.

Popular Lectures on Modern Medicine. — In opening his course of popular lectures on modern medicine at the American Museum of Natural History, Prof. Frederic S. Lee said: "In accepting the Jessup lectureship I was influenced largely by the thought that through it I might perhaps be of service to both the medical profession and an intelligent public by telling the public something of what medical leaders are doing. Notwithstanding the swift progress of medical science, we frequently meet with a distrust of the efficacy of medicine, a feeling that the physician knows far too little concerning disease and its cure, and a tendency to turn towards strange cults, making fair promises. Such distrust is as old as medicine itself. I do not believe that it is justified." The subject of this first lecture was the normal human body, ignorance in regard to which he declared to be extraordinarily great. "It is strange," he said, "to find thinking, reasoning men and women, who were born with their bodies, who have clung to them in sickness and in health, who have used them for every variety of human service and yet

hold themselves aloof from a knowledge of bodily affairs. I suspect that we have here an inheritance, through many generations, of the medieval notion of the vileness of the human body, a notion which is out of keeping with the enlightened science of to-day. This science shows within ourselves wondrous mechanisms and adaptations which ought to arouse any man's admiration. At one point he illustrated the complexity of the human organism by describing the various forces brought into play in the simple act of lifting one's arm, and went on to say: "We may, in our bewilderment, well wonder why a mere innocent contraction of the biceps does not bring in its train an attack of nervous prostration. Seriously, this great complexity is not appreciated. Gay critics, the anti-this and the anti-that, grow impatient with medical science and turn to others who profess to work successfully with simpler methods. But those to whom they turn are utterly unfamiliar with the complexities of the human body and its functions, complexities that are far beyond the anti-this and the anti-that."

## Current Literature.

### NEW YORK MEDICAL JOURNAL.

JAN. 21, 1911.

1. ELSNER, H. L. *Metastasis to the Nervous System from Cancer of the Stomach and Intestines.*
2. SWAN, J. M., AND SUTTER, C. C. *The Organic Basis of Neurasthenia.*
3. WILE, I. S. *Do Medical Schools Adequately Train Students for the Prevention of Infant Mortality?*
4. MCLAUGHLIN, A. J. *The Significance of the Bacillus Carriers in the Spread of Asiatic Cholera.*
5. BARACH, J. H. *Asthma and Anaphylaxis.*
6. SCHNEYER, J. *Some Clinical Methods of Diagnosis of the Functional Activity of the Heart.*
7. ABT, I. A. *Indications and Directions for the Use of Albumin Milk.*
8. HUNTER, D. W. *Some Phases of Asthenopia.*
9. HARVIE, J. B., AND CAREY, H. W. *A Rapidly Fatal Case of Amebiasis with Abscess of the Liver, originating in the Village of Green Island, N. Y.*

JAN. 28, 1911.

1. STEVENS, G. T. *A Series of Studies of Nervous Affections in Relation to the Adjustments of the Eyes.*
2. BAULER, A., AND GRANT, J. P. *A Case of Carcinoma of the Ileum with Unusual Symptoms.*
3. SPIVAK, C. D. *Dietary Studies in Institutions for Tubercular Patients in the State of Colorado.*
4. WEIL, H. *The Treatment of Septic Endometritis. An Effort to Solve the Problem of Post-Inflammatory Pelvic Adhesions.*
5. GROSS, M. H. *Direct Lavage of the Duodenum.*
6. WAUGH, W. F. *When Sedatives are Tonic.*
7. RUDIS-JICINSKY, D. *Rönigen-Ray Therapy and Its Practical Application in Malignant Lesions.*
8. COUGHLIN, R. E. *Report of a Case of Typhoid Fever Complicated by Double Parotiditis.*
9. GREENBERG, G. *Abuse of Urethral Instrumentation.*

### THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

FEB. 4, 1911.

1. *RICHARDSON, M. H. *Operative Treatment of Cancer of the Breast.*
2. COTTON, A. C. *Disturbances of Lactation.*
3. SOUTHWORTH, T. S. *Complemental Feeding of the Infant as an Effective Aid in Maintaining Maternal Nursing.*
4. *DOUGLAS, C. *Feeding of Fats to Infants and the Difficulties Encountered.*
5. SINCLAIR, A. N. *Gersin-Roux Serum in the Treatment of Plague.*
6. BLAIR, V. F. *Notes on Cases of Trifacial Neuralgia treated by Deep Injections.*
7. DEACON, J. B. *A Report of the Tuberculosis Situation in Pennsylvania in 1909.*
8. SUTTON, R. L. *Localized Edema in the Lumbar Region following the Use of Salvarsan.*
9. QUAIN, E. P. *Removal of Sewing Needles from Subcutaneous Tissue.*
10. WOLBACH, S. B. *Use of Colophonium in Differentiating the Eosin-Methylene-Blue and Other Stains.*
11. KING, G. L. *An Improved Tonsil Knife.*
12. BENEDICT, S. R. *Cerebrospinal Meningitis.*
13. DILLER, T. *Symptoms Suggestive of Brain Tumor relieved by the Correction of a Refractive Error.*
14. *SCHAMBERG, J. F., AND GINSBURG, N. *Some Dont's in the Use of Salvarsan.*

1. Richardson, in his paper on cancer of the breast, emphasizes many practical points that can come only to one who has had a large experience with this disease over many years. The following are some of the most important: The only treatment of breast tumors which as yet gives any real hope of permanent cure is thorough removal by operation. Operable cancer should never be subjected to any other method, for precious time is sure to be lost. The preliminary trial of the x-ray is one of the glaring instances in which patients go from operability to hopelessness. Early diagnosis does more to give good prognosis than anything else. The only factor for success is the early, invariable thorough extirpation of all breast tumors in which there is any doubt as to their nature. All non-operative methods must be strictly confined to the inoperable cases. Richardson is inclined to advise operations on all breast tumors, whether the diagnosis points toward malignancy or not, provided the patient is of the cancer age. A diagnosis of benignancy is positive enough to contraindicate operation if the patient is not of the cancer age and if the history and signs favor benignancy, but if the patient is of the cancer age a reasonably certain diagnosis of benignancy is not strong enough to justify the postponement of operation unless there are contra-indications to operation other than the tumor itself. The slightest suspicion of malignancy should demand operation, especially at the cancer age. In all tumors of the breast the presumption should be that they are malignant until they are proved benign.

4. Douglas finds that many infants are fed a too high percentage of fat. They are either born with an imperfect fat digesting power or very rapidly acquire it through the overfeeding of it. The overfeeding of either fat, protein or sugar will very soon materially limit or entirely destroy the power to digest that food. There is always less difficulty in feeding fat to normal infants during the first months than to those who are older. It is a serious mistake to increase the proportion of fat for its laxative effect. If a small increase of 1% does not promptly produce the desired softening effect, no further increase will do it, but will do harm. He advocates the use of rice, which contains a low fat per cent and a negligible content of crude fiber and is, on the whole, much more digestible and suitable in these cases than either barley or oatmeal.

14. Schamberg and Ginsburg advise against the use of salvarsan in myocarditis, in advanced cases of tabes dorsalis and general paresis, in nerve syphilis affecting vital centers, in grave kidney disease, in cachetic and debilitated persons, in aneurysm, in optic neuritis and in persons with lesions (such as gastric ulcer) in whom increased blood pressure may produce hemorrhage. It is unsafe under any circumstances to inject into the veins a solution which is not perfectly clear, or to inject the salvarsan into the veins without previously running in physiologic salt solution, or to infuse a cold solution. A routine dosage should never be used; the dose should be gauged according to the weight of the patient and the character of the

condition to be treated. Intravenous injections should not be given in the office or in a dispensary. The patient should always be treated where he can be put to bed and carefully observed for a period of not less than three days. [E. H. R.]

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

JANUARY, 1911.

1. *STENGEL, A. *Paroxysmal Pulmonary Edema and Its Treatment.*
2. *ELSNER, H. L. *The Control and Treatment of Hypertension and Arteriosclerosis.*
3. *SCHMOLL, E. *The Tonic Use of Digitalis.*
4. *MEARA, F. S. *The Treatment of Typhoid Fever.*
5. *DOTY, A. H. *Cholera from a Modern Standpoint.*
6. *LICHTY, J. A. *The Relation of Disease of the Gall Bladder and Biliary Ducts to the Gastric Functions.*
7. *NILES, G. N. *The Dyspepsia of Old Age.*
8. *STOLL, H. F. *The Diagnosis of Tuberculosis of the Bronchial Glands.*
9. ANDERSON, P. V., AND SPILLER, W. G. *Pellagra, with a Report of Two Cases with Necropsy.*
10. BOVÉE, J. W. *The Influence of the Trendelenburg Position on the Quantity of Urine Excreted during Anesthesia.*
11. TUNIS, J. P. *Multiple Abscesses of the Nasal Submucosa in a Case of Leukemia.*

1. Stengel's article deals with the condition characterized by repeated sudden attacks of dyspnea with frothy, often blood-stained sputum, occurring usually in connection with cardiac insufficiency, especially in the presence of high arterial pressure. A critical review of experimental evidence makes it probable that an important factor in production of the disorder is a disproportionate action of the right and the left ventricle, with abnormal congestion in the pulmonary circulation, with perhaps as a subsidiary cause an abnormal permeability of the pulmonary vessels. In treatment chief reliance is to be placed upon morphia, which empirically acts as a specific in relieving the attack. Nitroglycerine may be of service in mild attacks, but fails entirely in those more severe. Venesection is efficacious but unnecessary. Between attacks avoidance of overexertion and excitement, restricted diet, treatment of renal disorder if present and cardiac stimulation by caffein or digitalis may be desirable.

2. Elsner emphasizes the importance of diseases based upon arteriosclerosis and expresses the belief that their frequence is increasing. He, therefore, outlines a system of treatment by which he believes that the occurrence of arteriosclerosis is to be diminished. He believes that arteriosclerosis and its distribution can be traced largely to the overtaxing of the various organs involved and urges avoidance of all overtaxing of the various functions. Tobacco and coffee are to be used in great moderation, also alcohol. Excesses in diet are to be corrected. Excessive mental activity is to be avoided, also excessive coitus. Muscular exercise in advanced cases is to be regulated by passive motions of the Zander type, and by hydrotherapy. High-frequency currents are recommended. Of drugs, the iodides, theobromine and digitalis may be useful according to circumstances. In cases with sensory symptoms the nitrites are of service.

3. Schmoll calls attention to the recent recommendation of the continuous use of digitalis in small doses in heart disease for a tonic effect, to prolong the efficiency of the myocardium, particularly in cases of valvular disease of rheumatic origin. He believes it indicated from the first appearance of signs of loss of tonicity, râles at the bases of the lungs, enlargement of the liver or slight edema of the ankles, in doses amounting to 0.1 gr. a day.

4. Meara contributes a valuable didactic discourse on the treatment of typhoid fever, but with little that is not generally known. In diet he urges the acceptance of the more liberal ideas of feeding that have in recent years superseded the undernourishment in the past, giving as illustrations the diets now in use in several modern hospitals. He is emphatic as to the advantages of hydrotherapy, but warns against its too heroic application. In prophylaxis, attention is directed to the benefits of preventive inoculation.

5. Doty presents evidence that in certain cases of cholera the incubation period may be prolonged or a period of weeks, and that there may be "carriers" in whom the symptoms of disease never appear. These cases cannot be detected in quarantine stations; each community should provide for prompt detection of the disease and isolation of cases. With modern sanitary regulations, however, there is little danger of widespread epidemics.

6. Lichty has studied 249 cases of disease of the gall bladder with reference to gastric symptoms. In 156 of these, gastric analyses were made. In 54% he found hyperacidity, and in many a diminution of gastric motility. He believes that hyperacidity should be regarded as evidence of some definite lesion in the gastro-intestinal tract or its appendages.

7. Niles describes the dyspepsias peculiar to old age as depending largely upon a disproportion between appetite and digestive power, either from inability to ingest sufficient food from a too early sense of repletion, or from loss of the normal sense of repletion with consequent overeating.

8. Stoll maintains that insufficient attention is paid to the diagnosis of bronchial gland tuberculosis and summarizes the various diagnostic signs which may be of value, as illustrated by a series of cases. Of symptoms he mentions the insidious onset of languor, cachexia and irregular pyrexia, later cough of "brassy" quality, sometimes respiratory stridor, sometimes hemoptysis. Of the numerous physical signs to be looked for he mentions dilated thoracic veins, tenderness over the manubrium sterni, tenderness of upper thoracic vertebral spines, mediastinal and parasternal dullness, spinal and paravertebral dullness, vertebral bronchophony below the seventh cervical vertebra, venous hum over the manubrium when the head is hyperextended, and râles in the region of the nipple. Much reliance is placed upon x-ray examinations. [F. W. P.]

THE LANCET.

JAN. 14, 1911.

1. *HYSLOP, T. B. *An Address on the Influence of Parental Alcoholism on the Physique and Ability of Offspring.*
2. HUNTER, W. *An Address on the Rôle of Sepsis and of Antisepsis in Medicine.*
3. *DORAN, A. H. G. *Subtotal Hysterectomy for Fibromyoma Uteri.*
4. RANSOME, A. S., AND CORNER, E. M. *Gangrene of Limb during Convalescence from Diphtheria.*
5. KERR, J. M. M. *Importance of Removing the Uterus in Certain Diseased Conditions of the Adnexa.*
6. PATERSON, H. J. *The Association of Duodenal Ulcer with Appendicular Disease.*
7. BUZZARD, E. F. *The Treatment of Disseminated Sclerosis: A Suggestion.*
8. CASSIDY, M. A., AND NORBURY, L. E. C. *Torsion of the Left Broad Ligament and Fallopian Tube in a Child.*
9. TORRENS, J. A. *Massive Infarction of the Renal Cortex.*

1. Hyslop, discussing the effect of alcoholism in parents on the offspring, comes to conclusions, necessarily somewhat indefinite, that the progeny in such instances are apt to be weaker, that inherited psychoneuroses are more marked and that epilepsy and some forms of insanity appear to be intensified.

3. Doran, basing his observations on a study of 100 cases, discusses the advantages and disadvantages of subtotal hysterectomy for the fibroid uterus versus total hysterectomy. He also discusses the value of leaving one or both ovaries and part of the endometrium. He believes this latter to be extremely advisable in all cases when the organ or tissue is healthy. [J. B. H.]

BRITISH MEDICAL JOURNAL.

JAN. 14, 1911.

1. POWER, D'A. *The Second Hunterian Lecture on the Results of the Surgical Treatment of Displaced Semilunar Cartilages of the Knee.*
2. LOW, W. S. *Conservative Surgery of the Nose.*
3. OSBORNE, H. *On the Connection of Enlarged Cervical Glands with Carious Teeth, Enlarged Tonsils and Adenoids.*
4. *MACVIE, R. C. *Draughts and Colds.*
5. STURGE, M. D., AND HORSLEY, V. *On Some of the*

*Biological and Statistical Errors in the Work on Parental Alcoholism by Miss Elderton and Prof. Karl Pearson.*

4. Macfie gives a clear statement of the part played by draughts in producing colds. He concludes that draughts do occasionally play an auxiliary part in the production of colds, but that they are easily to be deprived of their dangers and should be favored rather than feared. If the body and the skin are kept in good condition and living-rooms kept clean, free from dust and cool and well-ventilated, draughts will have no ill effects. [J. B. H.]

JAN. 21, 1911.

1. *JEX-BLAKE, A. J. *A Lecture on Cardiac Arrhythmia.*
2. *BOSANQUET, W. C. *A Lecture on Theory and Practice in the Treatment of Pulmonary Tuberculosis.*
3. *CROWE, H. W. *A Series of One Thousand Inoculations, Chiefly in Private Practice.*
4. *MILLS, J. A. *Typhoid Infection.*
5. SYMES, J. O. *Myasthenia with Enlargement of the Thymus Gland.*
6. GUNN, J. A., AND FELTHAM, W. J. *The Antihemolytic Action of Arsenic.*

1. Jex-Blake, in a lecture on cardiac arrhythmia, gives a clear and concise résumé of this somewhat difficult and complex subject. He classifies the subject as follows as to causes: (1) Those causes arising within the heart and due to changes in the state of nutrition of its walls; and (2) those causes arising outside the heart, due to alterations in nervous impulses or to changes in the case with which the blood enters or leaves it. After discussing the physiology of the heart beat, he takes up the extra-cardiac causes of irregularity: (*a*) respiratory; (*b*) neurogenic, due to emotions, toxins such as alcohol, tea, tobacco; and (*c*) vascular causes, such as adhesions and other rare conditions. Under the intracardiac causes he discusses heart block and paroxysmal tachycardia. The article is well worth reading.

2. Bosanquet gives an excellent general review of the treatment of pulmonary tuberculosis. He does not think estimation of the opsonic index a necessary procedure. Under forced feeding, he calls attention to the fact that it is what the stomach can digest rather than what it can hold which is of value. His ideas as to the use of alcohol and tobacco are eminently sane. He does not believe in the value of putting on fat alone. "A consumptive may be fat and yet be going down hill." He emphasizes the value of work treatment, yet urges saneness in its use; temperature charts alone are not a safe guide. He urges sanatorium treatment as an educational measure. His ideas on the value of climate in treatment are excellent. The paper contains many valuable suggestions.

3. Crowe describes his results with the vaccine treatment of various conditions. His figures are too small to judge from but are none the less interesting. In tuberculosis he has had poor results in kidney cases, and good results in peritoneum cases. He believes that autoinoculation by regulated massage is a better treatment of tuberculous glands than injections of tuberculin. (This, unless the patient was under very close supervision, would hardly accord with our views. — J. B. H.)

4. Mills believes that rats are an important factor as carriers of typhoid infection and cites cases to demonstrate his theory. [J. B. H.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 2.

JAN. 12, 1911.

1. ELSCHNIG. *Pathology and Treatment of Eye Injuries.*
2. *UHLENHUTH AND MULZER. *General Syphilitic Disease in Rabbits.*
3. DUNBAR, W. P. *Use of Dangerous Material in Margarine Factories.*
4. ISRAEL, J. *Fever with Malignant Tumors of the Kidneys and Suprarenals.*
5. *BOAS, J. *Phenolphthalein as a Reagent for Testing for Occult Bleeding of the Gastro-Intestinal Tract.*
6. ASTWAZATUROW, M. *Relation between Tabes and Leptomeningitis.*
7. WEIL, S. *Bactericidal Possibilities of Serous Inflammatory Exudate.*
8. VOECKLER, T. *Nail Extension in Fracture.*
9. ROTHSCHILD, O. *Cure of Trapezius Paralysis for Functional Purposes by Means of a Plastic Fascia Operation.*
10. BORUTTAN. *Relation of Hydropyrins in the Organism.*
11. PERNICE. *A New Seat Cushion.*

2. These authors have succeeded in producing a disease in rabbits which they consider without doubt to be a true syphilitic infection. They have succeeded in recovering the spirochete from the blood in some cases. They think that this experimental work will open up a large field for solving questions of heredity, the relation of diseases of the nervous system and methods of treatment by chemotherapy.

5. Boas reports a test for occult blood in the stools with phenolphthalein as the reagent. He thinks it stands between the guaiac and the benzidin test in sensitiveness. This reagent has the advantage of being more readily preserved in the solution in which it is used. [C. F., JR.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 2.

JAN. 10, 1911.

1. KOSSEL, A. *The Chemical Constitution of the Cell Nucleus.*
2. *WALDVOGEL. *Gastrospasm.*
3. *BAUER, F. *Blood Agglutinin Reaction in Serum Sickness.*
4. MICHAELIS, H. *Prodromal Signs for Puerperal and Post-Operative Thrombosis and Embolism.*
5. MARCUS, H. *The Salvarsan Treatment in Syphilitic Affections of the Nervous System.*
6. FAVENTO. *Further Experiences with Salvarsan.*
7. RAVARSINI, C. *Experiences with Hectin in Syphilis.*
8. HAYMANN, H. *Further Experiences with Pantopon.*
9. JURASZ, A. T. *Successful Direct Cardiac Massage in Apparent Death from Narcosis.*
10. RUPP, A. *A Case of Persistent Ductus Omphalo-entericus.*
11. WENGLER, J. *Lead Poisoning from Earthenware Pottery.*
12. ALTHOFF. *Bringing Out the Achilles Reflex.*
13. HIRS, F. *Injections with Naturally Radio-Active Warm Water Direct from the Spring.*
14. MEIROWSKY, E. *The Technic of Intravenous Injection.*

2. Waldvogel thinks that gastrospasm is much commoner as a motor neurosis independent of organic disease of the stomach than is generally supposed. He finds it in neurasthenic states, in lead colic, in arteriosclerosis of the abdominal vessels and after abuse of tobacco. Excess of HCl is generally associated with it. The symptoms are a sense of oppression or fullness in the epigastrium, the belching of gas without odor, and pain in the absence of evidence of stasis of food or palpable tumor. He claims to have had prompt and good results from the use of atropine in the dose of 0.0005 gm. twice daily. He gives no statistics of cases.

3. The writer describes a new reaction by which he believes that serum sickness can be accurately diagnosed. The test is performed by mixing washed horse corpuscles with serum of the patient in different dilutions. A positive reaction is shown by agglutination of the corpuscles into masses which can be seen with the naked eye. [G. C. S.]

REVUE DE CHIRURGIE.

DECEMBER, 1910.

1. *BECK, E. G. *The Conservative Treatment of Cold Abscesses.*
2. DUVAL, P. *Operative Technic of Ligature of the Subclavian Internal to the Scaleni and in the Mediastinum.*
3. *TANTON, J. *Isolated Fractures of the Transverse Apophyses of the Lumbar Vertebræ.*
4. CARAVEN AND BASSET. *Ulcerations of the External Iliac Artery in Appendicular Abscesses.*
5. MARQUIS, M. E. *Origin of Hypertrophy of the Prostate.*

1. Beck reports the results of the employment of his bismuth paste in the treatment of tuberculous abscesses at the North Chicago Hospital. He believes that its favorable action is based, not on the antiseptic power of the bismuth, but on the fundamental principle which governs all modify-

ing substances, namely, the production of local leucocytosis by chemiotaxis.

3. Tanton reports 2 cases of isolated fracture of transverse processes of the vertebræ, and collects 17 others from the literature. [R. M. G.]

## Obituaries.

### EDWARD G. JANEWAY, M.D.

Dr. Edward Gamaliel Janeway, of New York, one of the most eminent physicians in this country, died at his country home in Summit, N. J., on Feb. 10. He had been in poor health for some months, but his acute illness was of but a few days' duration. He was a son of the late Dr. George J. Janeway, and was born in Middlesex County, New Jersey, on Aug. 21, 1841. He was graduated from Rutgers College, New Brunswick, in 1860, and from the College of Physicians and Surgeons, New York, in 1864. Before receiving his degree he served in 1862–63 as a medical cadet in the United States Army Hospital, at Newark, N. J. In 1866 he was appointed curator to Bellevue Hospital, a position which he held until 1872, when he was made a visiting physician to the hospital; while from 1868 to 1871 he was visiting physician to Charity Hospital on Blackwell's Island, now the City Hospital. He very early won distinction in the profession, especially on account of his skill as a pathologist. In 1872 he was appointed professor of pathological and practical anatomy in Bellevue Hospital Medical College, and, in addition, lecturer on materia medica, therapeutics and clinical medicine. In 1881 he became professor of diseases of the mind and nervous system in the same school, and on the death of Dr. Austin Flint, Sr., in 1886, succeeded him as professor of the principles and practice of medicine and clinical medicine. He afterwards occupied the same chair in the University and Bellevue Hospital Medical College, after the union of the two schools, and in 1898 was made dean of the faculty, a position which he held until 1905. The degree of LL.D. was conferred upon him by Columbia and Princeton universities and Rutgers College. He was at different times president of the New York Pathological Society, the New York Academy of Medicine, and the National Association for the Study and Prevention of Tuberculosis, and he was one of the founders of the New York State and County Medical Associations. From 1875 to 1881 he was a commissioner in the Health Department, and in 1892, when the city was threatened with an invasion of cholera, he was a member of the advisory committee of the New York Chamber of Commerce. He was the author of a valuable work on the clinical diagnosis of hepatic affections, and his "Pathological Reports of Autopsies made in Bellevue Hospital" constituted a rich thesaurus of information.

Dr. Janeway's exceptional ability as a diagnostician, as well as his resourcefulness in therapeutic measures, gave him pre-eminence as a consultant, and until the end of his life his services in this capacity were eagerly sought for. His manner of dealing with his fellow practitioners and with patients was characterized by great simplicity and directness, and this was also true of his teaching, in which field his reputation was deservedly of the highest. At the time of his death he was consulting physician to Bellevue, St. Luke's, the Presbyterian, Mount Sinai, and various other hospitals. He is survived by a widow, who was the daughter of the late E. P. Rogers, D.D., two married daughters, and a son, Dr. Theodore Janeway, who also is widely known in the medical profession.

### LEONARD P. KINNICUTT, Sc.D.

Leonard Parker Kinnicutt, Sc.D., who died of tuberculosis on Feb. 6, at Worcester, Mass., was born in that city on May 22, 1854. He took the course in chemistry at the Massachusetts Institute of Technology, and in 1875 graduated with the degree of Sc.B. During the next four years he studied at the Universities of Bonn and Heidelberg in Germany, and returning thence in 1879 worked for a year at Johns Hopkins, and subsequently for two years at Harvard, from which he received the degree of Sc.D. in 1882. He was instructor in chemistry at Harvard from 1880 to 1883. In the latter year he was appointed assistant professor and in 1885 professor of chemistry at the Worcester Polytechnic Institute, and in 1890 became director of its chemical laboratory. Since 1903 he had been consulting chemist of the Connecticut Sewerage Commission. He was a Fellow and former vice-president of the American Academy for the Advancement of Science, a Fellow of the American Academy of Arts and Sciences and of the London Chemical Society; he was a member of the American Chemical Society, of the Society of Chemical Industry, of the Society of American Bacteriologists, and of the Deutsche Chemische Gesellschaft.

Professor Kinnicutt was an expert in sanitary chemistry, especially in the disposal of sewage, and his reputation was not merely local or national, but international. His latest book, "Sewage Disposal," written in conjunction with Professor Winslow, of the Institute of Technology, and Mr. Pratt, of the Ohio State Board of Health, is a complete treatise on the chemical, biologic and engineering aspects of this great problem of civilization, and promises to become an English classic on the subject.

In spite of disease, his life was one of tireless, active and extensive labor in the service of science and of the community. He was a pioneer and an authority in a field of work which has done so much for the advancement of preventive medicine. Of his personality, Prof. William T. Sedgwick has written:

"He was unique, lovable and altogether charming. Kindness and friendship such as his life exemplified could not further go. He was critical, yet just; fearless, yet considerate of others; honest to a fault; a hard worker; and to a degree nowadays unusual an accomplished and cultivated gentleman."

## Miscellany.

### PROGRESS OF THE PLAGUE IN CHINA.

REPORTS indicate that during the past week the epidemic of bubonic plague in China has been steadily progressing. At Harbin there is said to be some decrease in the number of cases, but the infection which has spread thence is now rife in many surrounding cities. At Assikko, in Manchuria, the daily average of deaths from plague is said to be nearly four hundred. Report from St. Petersburg states that there are one hundred deaths daily in Kwanchengtze, a large town west of the province of Kirin, on the line of the Manchurian railway. Forty-nine deaths were reported to have occurred at Tsitsikar on Feb. 5; there are said to be fifteen deaths daily at Tientsin; and a report to Washington, D. C., from the United States consul at Chefoo, China, states that two hundred deaths have already occurred at that port, and that there are now twenty deaths there daily from the disease. The German government has taken most rigid measures to keep the plague out of its protectorate of Kiao Chow and has established complete military quarantine of the town of Tsingtau. The Japanese government has sent Dr. S. Kitasato to Manchuria to investigate and report on the situation; and the United States has detailed for the same purpose, as representative of the American National Red Cross Society, Dr. Richard P. Strong, now stationed at Manila, P. I., as chief of the biological laboratory of the Philippine Bureau of Science.

### RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JAN. 28, 1911.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | — | — | Waltham | 8 | 1 |
| Chicago | 750 | 203 | Brookline | 10 | — |
| Philadelphia | — | — | Chicopee | 6 | 4 |
| St. Louis | — | — | Gloucester | 6 | 1 |
| Baltimore | — | — | Medford | 4 | — |
| Cleveland | — | — | North Adams | 8 | 2 |
| Buffalo | — | — | Northampton | 5 | 1 |
| Pittsburg | — | — | Beverly | 6 | 2 |
| Cincinnati | — | — | Revere | 3 | — |
| Milwaukee | — | — | Leominster | 4 | 2 |
| Washington | — | — | Attleboro | 3 | 1 |
| Providence | — | — | Westfield | 5 | — |
| Boston | 277 | 74 | Peabody | — | — |
| Worcester | 33 | 7 | Melrose | 10 | 2 |
| Fall River | 35 | 19 | Hyde Park | 4 | 1 |
| Lowell | 43 | 12 | Woburn | 3 | — |
| Cambridge | 34 | 6 | Newburyport | 6 | — |
| New Bedford | 26 | 11 | Gardner | 5 | 3 |
| Lynn | 22 | 3 | Marlboro | 5 | 1 |
| Springfield | 19 | 4 | Clinton | 2 | — |
| Lawrence | 30 | 18 | Milford | — | — |
| Somerville | 23 | 3 | Adams | 5 | 1 |
| Holyoke | 22 | 9 | Framingham | 8 | 1 |
| Brockton | 8 | 2 | Weymouth | — | — |
| Malden | 11 | 1 | Watertown | — | — |
| Haverhill | — | — | Southbridge | 5 | — |
| Salem | 17 | 5 | Plymouth | — | — |
| Newton | 8 | 2 | Webster | 1 | — |
| Fitchburg | — | — | Methuen | 5 | 1 |
| Taunton | 10 | 1 | Wakefield | 1 | — |
| Everett | 3 | 1 | Arlington | 2 | — |
| Quincy | 8 | 2 | Greenfield | 2 | — |
| Chelsea | 17 | 3 | Winthrop | 1 | — |
| Pittsfield | 15 | 3 | | | |

### SOCIETY NOTICES.

NEW ENGLAND PEDIATRIC SOCIETY. — The fourteenth meeting will be held in Sprague Hall, Boston Medical Library, 8 The Fenway, on Saturday, Feb. 25, at 8.15 P.M. The following papers will be read: (1) "The Transfusion of Infants with Glass Tubes," Beth Vincent, M.D., Boston. (2) "Public Health Laboratory," B. L. Arms, M.D., Boston, director of the City Bacteriological Laboratory. (3) "Diarrhea in Infants Associated with the Presence of the Gas Bacillus in the Stools," Arthur I. Kendall, Ph.D., Boston, Richard M. Smith, M.D., Boston. Light refreshments will be served after the meeting.

JOHN LOVETT MORSE, M.D., *President.* FRITZ B. TALBOT, M.D., *Secretary.*

THE BOSTON SOCIETY OF MEDICAL SCIENCES. — The next meeting will be held at the Harvard Medical School, in the amphitheater of Building D, on Tuesday, Feb. 21, 1911, at 8.15 P.M. Papers will be presented by Drs. W. B. Cannon and D. de la Paz: "The Stimulation of Adrenal Secretion by Emotional Excitement." (20 minutes.) Dr. R. C. Larrabee: "Carnot's Hæmopoietic Serum." (15 minutes.) Drs. W. P. Lucas and R. B. Osgood: "Experimental Reproduction of Anterior Poliomyelitis from the Nasal Mucosa of Recovered Monkeys." (15 minutes.)

CLEAVELAND FLOYD, M.D., *Secretary.*

### RECENT DEATHS.

DR. WHITFIELD WARD, of New York, died on Feb. 8. He was born in New York City on July 28, 1850, and was an alumnus of Columbia University. He was graduated from Bellevue Hospital Medical College in 1874.

DR. HORACE W. PATTERSON, a prominent physician of New Brighton, Staten Island, N. Y., died on Feb. 6, in the S. R. Smith Infirmary. He was forty years of age, and was graduated from the College of Physicians and Surgeons, New York, in 1895. At the time of his death he was chief of the Division of Communicable Diseases of the New York Health Department in the Borough of Richmond, pathologist to the S. R. Smith Infirmary, and attending physician to St. Vincent's Sanitarium for Tuberculosis.

DR. ROBERT HAMILTON PHELPS, of Norwich, Chenango County, N. Y., died on Feb. 6, aged forty-one years. He was graduated from the medical department of Syracuse University in 1894.

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Pernicious Vomiting. By S. H. Blodgett, M.D. Reprint.

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Gynecological Therapeutics. By S. Jervois Aarons, M.D. William Wood & Co. 1910.

Notes on Dental Metallurgy. By W. Bruce Hepburn, L.D.S. William Wood & Co. 1911.

Hay Fever and Paroxysmal Sneezing. By Eugene S. Yonge, M.D. William Wood & Co. 1910.

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## Original Articles.

### A REVIEW OF THE MIDWIFE SITUATION.*

BY ARTHUR BREWSTER EMMONS, 2D, M.D., BOSTON,
AND
JAMES LINCOLN HUNTINGTON, M.D., BOSTON.

THE midwife situation abroad and in our own country has impressed us so strongly that, when the question of licensing the midwife was agitated, we felt that the subject merited a thorough study in order to form an opinion which might command the consideration and respect of the best medical thought of this country. We hope for your co-operation in this study, and, therefore, do not hesitate to go into considerable detail on what seem to us points of great importance.

Let us begin by reviewing the methods of supervision employed in foreign countries and our own. Then let us carefully consider whether or not we have the moral right, in view of our present knowledge, to offer to the community two standards of obstetrical skill: one for those who can afford it, — the product of four years of medical training; the other for the impecunious, — the midwife, unskilled in general medicine and surgical technic. Or let us see if it is not possible to have our present laws in Massachusetts enforced and one grade of obstetrical knowledge required for all who practice the art.

To realize that this is not an idle theoretical discussion, but the presentation of an actual problem directly concerning the welfare of our community, we only have to consult the proceedings of two committees [1, 2] interested in social service here in Massachusetts to find that proposed legislation for the immediate regulation and licensing of midwives has been actually agitated during this present year.

We hope to convince you that the practice of the midwife, when licensed, has never been successfully or satisfactorily regulated and controlled in any country or state; moreover, that we in Massachusetts are most favorably situated in this regard both as to the number of midwives actually in practice now and in the existing laws concerning them. Also we hope to show that these laws can be so modified as to greatly facilitate the prosecutions not only of the midwives, who practice now in open violation of the law, but also the class of practitioners that shield these women. We also hope to show that the community should be aroused to demand and expect much better obstetric service than it would be possible for the people to receive under the midwife, no matter how well trained for her vocation.

*Historical.* — The midwife problem in its broad sense is a sociological problem. To understand clearly our present position, a brief glimpse at the past, tracing the midwife in her development and course, may give us perspective and a broader view of the present situation. In Great Britain and throughout Europe the midwife has been an established institution in all historic time.

Bacteriology, antiseptic and aseptic surgery have put obstetrics on an entirely different basis, raising it to the position, sociologically at least, of the most important branch of surgery. Therefore it is right that society demand the most intelligent obstetric care. These conditions have developed the efficient trained nurse of to-day, acting in harmony with the doctor, who carries the responsibility. What position, then, does the midwife hold in this modern scheme?

We shall attempt to answer this question by showing what has been done in the older countries, where the best efforts for her development have been made, and also the provisions for her training in this country, and with what results.

A glance at the most recent history in Europe and at home shows a series of attempts to license, educate and control the midwife. The writers have recently had the opportunity personally to observe the conditions in England, Austria, France and Germany, and to ascertain the laws of Italy in regard to the midwife. We find that the question of reducing to a fair minimum the injuries to her patients is a more or less urgent question in every country, including many of our states to-day.

#### ITALY.

A joint committee of the Chicago Medical Society and the Hull House,[3] after an investigation of the midwife situation throughout the world, gave it as their opinion that the best schools of midwives were those of Rome and Naples, with Paris third and Berlin fourth.

In 1886 the Italian government [4] took control of the midwife situation. Since that time reliable statistics as to puerperal fever and other diseases related to the parturient woman have been collected. Before this took place the mortality was admittedly very high.

A new law was put in force Feb. 23, 1890, and has remained substantially the same since that date. Under this law the education of the midwife was placed under the supervision of the government. Midwife schools could be established in any city or town where a university existed. The funds were to be supplied by the Minister of Instruction in conjunction with the local authorities. The direction and teaching were to be under the professor of obstetrics.

The requirements for admission to such a school were as follows: The candidate must be healthy, not disfigured, between the ages of eighteen and thirty-six. She must present a certificate of good conduct and have been successfully vaccinated or have had smallpox. The total fees were $38. The course was from one and one-third to two years. The examinations were both written and oral, with graded marks. One of the requirements was the histories and clinical courses of two complete cases observed by the candidate and signed by the professor. If "eminence" was attained, the matriculation fee and one year's tuition was returned to the candidate.

*Regulations of practice.* — The midwife must notify a physician if the patient's temperature reaches 100.4°. If a physician is not available, and the temperature rises to 101.3°, the municipal

* Read before the Obstetrical Society of Boston, Dec. 27, 1910.

authorities must be notified. She is prohibited from using instruments or drugs or doing intrauterine operations, except in urgent cases, where she assumes the responsibility of her actions. If puerperal fever develops, she is suspended for five days or disinfected by the authorities. She must keep a case book.

*Instructions.* — Her instructions are minute and in general good, describing a fair technic and the ordinary care of a labor case, which if carefully and conscientiously carried out by intelligent women should maintain a fairly satisfactory mortality rate. Let us glance for a moment at the results of this system.

Statistics collected in 1894 for the previous fifteen years show the conditions from the time the government took control, three years before the present law went into effect, and the twelve years following. Briefly, these figures show that in 1887 there were 85 deaths per million population from puerperal fever. A drop to 56 took place after the law of 1890 came into effect, and a gradual falling continued from that time till in 1902 there were 32 deaths from puerperal fever per million inhabitants. Similarly in other diseases connected with pregnancy, parturition and the puerperium the deaths fell between 1887 and 1902 from 150 to 53 per million population.

As the midwife does the bulk of obstetrics in Italy, the improvement in her training and equipment must constitute a large factor in this better showing.

The total death-rate, however, for 1902 was 1,037 from puerperal fever, and from other diseases connected with pregnancy was 1,746, giving a combined death toll from the practice of the midwives for that year of 2,783, with an estimated population of about 33,000,000, or 85 per million, and this rate of preventable deaths after the law has been in force twelve years and may be said to be in good working order.

### FRANCE.[5]

Since 1803 the midwife has been controlled in France. The French laws of 1893 require a theoretical and practical course of two years in order to obtain a midwife's diploma issued by the government.

### AUSTRIA.[6, 7]

In 1891, Austria lengthened the midwife course from six months to two years in the clinic, six months' preliminary theoretical and eighteen months' practical work.

### GERMANY.

In Germany we find essentially the same condition as in Austria, and as we have had opportunity to observe the entire training of the midwife, and the results of her practice, we propose to discuss at length the details of the situation of the German midwife, feeling that a study of her position will reveal not only the amount of knowledge required before she is entrusted with responsibility, but also the complicated and complete supervision regarded as essential by that enlightened nation. Such a study will enable us to see what preparations we must be ready to make should we decide to adopt a system with the midwife as the solution of our present condition, and what results we are entitled to expect under practically ideal supervision.

We have been unable to learn exactly how much obstetrics in Germany is in the hands of the midwife. Certainly nearly all normal cases and most operative cases in the early part of labor are conducted by the midwife alone, save in the families of wealth and position, where education has opened their eyes to the necessity for the physician's exclusive help during this critical period. We were constantly surprised to see how even in many of the families of the well-to-do the midwife was depended upon to assume the full responsibility. In the type of women entering the schools of midwifery, nearly all classes were represented, from the professor's daughter to the simplest peasant girl.

We must realize that Germany has been training the midwife for generations to understand the firmness of her hold upon the general public. The trained midwife followed as naturally in the course of development as the trained physician, and we find with the knowledge of the necessity for clean obstetrics, stringent laws were passed for her education and regulation.

The midwife in Germany to-day is trained in the government *kliniks* by university professors who are salaried by the state — the same professors, for the most part, who are responsible for the education of the medical students. The midwife course is in most cases six months; always as much as that is required. Her textbook, issued by the government, she is required to know almost by heart from cover to cover. It takes up anatomy, including the entire skeleton; the nervous, alimentary and circulatory systems, as well as the genito-urinary tract. There is also considerable physiology, bacteriology, normal and pathological obstetrics, and a full description of her legal status. This book is supplemented by lectures and explained by recitations occupying in all about twelve hours a week throughout the course.

She also has thorough drills in the principles of diagnosis by means of abdominal palpation, auscultation, pelvimetry and vaginal examination, this work being carried on in the pregnancy wards. She has almost daily drill in the "vaginal touch" by means of the manniken and the fetal cadaver. She is required to make vaginal examinations and to deliver a certain number of cases in the confinement ward under the direction of the resident physician and graduate midwives. Here also she is taught as far as is possible in the limited time of her instruction the principles of aseptic technic. This is further supplemented by the observation of surgical operations, both gynecological and obstetrical, in the amphitheater.

At the conclusion of her course she is subjected to a rigid examination, both oral and written, before a board of examiners. Besides answering questions for some fifteen minutes, the candidate

must demonstrate her knowledge of making a diagnosis of presentation and position in the manniken, and outlining her methods of procedure in the given case. As we were present at such an examination we can definitely state that it is a rigid test and one that the average third-year student of the Harvard Medical School would find some difficulty in passing with distinction.

Now let us turn to the midwife in practice and see what her position is; in other words, how she is regulated. She is constantly under the supervision of a government physician, who is coroner, medical examiner and local board of health officer combined. She must report to him before she begins her practice, and so long as she is in his jurisdiction her work is constantly subjected to his supervision. To him she must report immediately all stillbirths and deaths, all cases of puerperal fever and ophthalmia neonatorum. Her home, her equipment, her clothing and her person must always be ready for his inspection. She may lose her right to practice if her home is dirty or if she is caring for obstetrical cases under her own roof. The contents of her bag and her case book are outlined by law. She is required to wear clean and washable gowns when in attendance on cases. Her hands must be clean and the skin in good condition at all times. She must report to this officer any septic lesion or ulcer on any part of her body. Violations of these rules will lead to fine, or imprisonment, or both.

The midwife must report to some local physician any symptoms suggesting eclampsia or miscarriage. She must notify him in any case of antepartum hemorrhage, contracted pelvis or abnormal presentation, and this includes a breech presentation. Should the second stage last more than two hours, without progress; should the pulse or temperature rise above the limit considered not abnormal in obstetrics; the fetal heart rise above 180 or fall below 110; the placenta remain in the uterus too long after the delivery of the child; the uterus fail to contract and continue to bleed; or the perineum rupture during delivery, the midwife must notify a physician in writing, or over the telephone, of the condition, and unless actually employed on some case requiring his time it shall be the duty of this physician to respond immediately to the midwife's summons or he is subject to punishment.

In case an emergency arises out of her jurisdiction as laid down by law, after notifying the physician (or even before if the danger is imminent), it shall be her duty to do whatever seems necessary for her to perform, save only forceps and version, but in each and every instance she must communicate as soon as possible with the health officer by a detailed account of exactly what she has done and her reasons for so doing.

This gives an idea of the duties and responsibilities laid down by law for the regulation of the midwife. Added to all these requirements she must also return at stated intervals, in Bavaria every two years, for re-examination, after a few days' residence in the *klinik*, thus obliging her to keep constantly up to date.

But let us see how, in spite of all this, the midwife actually appears in practice in Germany. In the first place, one observing the work of the midwife in the confinement wards is struck by her lack of what is known as the aseptic conscience; that is, the knowledge that she is or is not surgically clean. After faithfully scrubbing her hands for the allotted fifteen minutes, she will unconsciously touch something outside of the sterile field and continue as if surgically clean. This, the writers have often observed. Of course there are exceptional pupil midwives who do not fall into this error, and they are usually ones who have previously received a nurse's training. But if the midwife makes these breaks in the hospital under the eyes of her instructor, and in ideal surroundings for surgical cleanliness, how much more likely will she be to fall into careless ways when out alone in a peasant's house? This is very marked in those midwives who return for their required period of training and re-examination. As one German house officer in the Frauenklinik in Munich remarked, "It is utterly impossible to teach these older midwives the first principles of asepsis."

At the time of the examination of the midwives in Professor Stökel's *klinik* in Marburg, one of the writers was present at dinner with the board of examiners, and after the dinner joined in the perfectly free discussion of the midwife problem, for these gentlemen openly admitted that it was a distinct problem to-day in Germany. When informed in answer to a question that it was against the law to practice as a midwife in Massachusetts, two members of the board instantly agreed that we were to be congratulated on our position, and that it was as it should be.

Others felt that while it might be true in America that the midwife could be dispensed with, that it was a mistake to hope for such a thing in Germany. Professor Stökel held this view and felt that the solution of this problem was in raising the standard of the German midwife by requiring a previous training, such as that of a nurse, before undertaking the midwife course. But he admitted that the community as a whole would have to be educated and said that it was a curious fact that even among people of refinement, the older and dirtier the midwife, the greater seemed the confidence placed in her ability and judgment.

Obstetricians as a whole lament the condition in Germany; many admitted frankly that of course the midwife was not qualified to attend cases in labor, but that the system was so firmly established in the community at large that it was doubtful if there ever could be a complete change made. Professor Bumm, in his recent book on obstetrics,[8] admits that the number of deaths from puerperal fever in Germany is far too high, — out of 2,000,000 births, 5,000 deaths from puerperal fever were reported in one year, — and he states that of course many cases were unreported.

A Berlin physician prominent in gynecology has recently written[9] to a committee of the

American Medical Association asking for information in regard to the number of deaths from puerperal fever throughout America, as he understood that we had no midwives in this country. The answer was made that, not only were we without vital statistics of any value, but that we were in many states overrun by midwives. The Department of Medical Economies of the *Journal of the American Medical Association*, referring to this correspondence, adds, "Midwifery is not so well regulated in this country as in Europe, and yet the harm done is probably less, since midwives are not so numerous."

The midwife is responsible for the extreme conservatism in the German point of view in regard to labor. Cases are allowed by the midwife to go along in labor practically indefinitely unless fever or other reportable complication arises. These cases regularly come late to operation, and the trend of obstetrical research has been distinctly how to care for these late emergencies. As a matter of fact, fever is the commonest cause for which the German midwife sends for help. In not a few of these cases, through inability to recognize a contracted pelvis, the only operation to be widely recommended in general practice is craniotomy on the living child, while in the *kliniks* this condition is met by hebeostomy and extraperitoneal Cæsarean section.[10]

Thus we have in Germany a system of training and regulation of the midwife so complete as to be almost ideal — a system of perfect harmony between the midwife and the physician. And yet the system is not a success in so far as it fails to meet with the approval of those medical scientists most deeply interested in the progress of German obstetrics.

### ENGLAND.

To us in New England the situation in Great Britain is of special interest because we are largely of English stock and are influenced by English tradition. In England from earliest times midwives have flourished and have been an integral factor in the social fabric. The legal correspondent of the *Lancet* gives the following historical sketch:[11]

"Four centuries ago bishops in England licensed the physicians, surgeons and midwives. They continued this practice down to the middle of the eighteenth century. About that time the College of Physicians of London took over the duties from the bishops of examining and admitting midwives to practice, a charge which they in turn renounced some ninety years ago. Since that time any person who chose might undertake the important duties of midwife. No test of competency was imposed by any responsible authority, and so the public was left to such protection as the common law afforded against the malpractice of uninstructed practitioners." For many years prior to the active agitation of the Midwife Law, which culminated in 1902, there were trained midwives acting in conjunction with some of the hospitals and institutions in London.

Since the passage of the Medical Acts, bills have been brought forward every few years in Parliament for licensing and regulating midwives. These bills were usually crushed by medical advice, but while the medical profession never took a definite and organized stand against the idea, the promoters of the bills were gaining in organization and influence with every defeat. In 1900 a measure brought forward by them was nearly made a law and in spite of defeat they continued these activities without pause with the opening of the succeeding session of Parliament.

Let us see who the contending parties were. Mr. Egerton, in a speech in the House of Commons, is our authority [12] for the following forces in favor of the bill for the licensing and regulation of midwives: the Obstetrical Medical Men, Women's National Liberal Association, Women's Industrial Council, Women's Liberal Federation, the Incorporated Midwives Institute and representatives of the Body of Coroners. Whether the reference to the Obstetrical Medical Men means a definite action on the part of the British Obstetrical Society or not, we have been unable to ascertain, but English obstetricians frankly admit that they as a whole were in favor of the act, as they were in constant touch with the evils of the then existing conditions and felt that any change would be welcome. It is interesting to note that many of the other organizations in favor of this measure, and most active in bringing it about, were societies interested in enlarging the sphere of the professional woman. This was an important factor — to give a new field of useful (?) activity to the women of England.

Against the bill we find the majority of the medical profession of England ununited and lacking definite policy. The General Council of Medical Education and Registration considered the bill thoroughly bad. The leading medical journals opposed it. In Parliament one of the opposition stated that 95% of the medical men of England were against the bill. In 1900 the *Lancet* made an extensive canvass [13] of English medical men and found that, out of 7,250, 5,000 opposed the bill, 640 were indifferent and 1,547 were in favor of the measure. Some physicians wrote against the bill in broad, sound terms; others attacked it bitterly on narrow and private grounds, and we actually find a body of medical men urging that all medical practitioners unite in a declination ever to respond to an obstetric case of difficulty or danger when it is known that a midwife has been in attendance.

Fenwick,[14] writing in 1902, emphasizes the fact that midwives are dying out naturally; therefore there is no need of legislation which would lead, he considers, to the following situation: A new order of independent practitioners; the midwife after some three months of work and the expenditure of some $75 would be created by Parliament the equal of the medical practitioner, who has spent five years or more in preparation and, roughly, $5,000. He goes on to say: "It is mere futile foolishness to pretend that she will not enter at once into competition with the

general practitioner, or to imagine that she will carefully confine her attention to the poorer classes, or to expect that she will refrain from practicing medicine as well as midwifery. It is submitted that the first and greatest effect of this legislation will be to flood the country with more or less well-educated women only too eager to avail themselves of the opportunity of becoming licensed quacks." Let us note later how nearly his prophecy has come true.

Another objection was made to the Midwife Law.[15] As drafted, it applied only to England and Wales. One member of Parliament proposed that the new law should conform with the provision in Ireland, where an almost perfect midwife system was in force. In 1902, that country was divided into well-arranged dispensary districts, and in each district a medical man with a midwife under him. The midwife cannot act herself, but was sent by the physician and kept him informed of the progress of the case, and of any complications. This proposal, however, met with no response.

This futile and diversified opposition by the ununited medical profession of England met with the expected defeat, and the bill was made a law July 30, 1902. Briefly condensed,[16] it prohibited any woman after a lapse of a few years from using the name of midwife or its equivalent, or to habitually and for gain attend women in childbirth unless certified to do so by the Central Midwives' Board, violation of this to be punished by fine. It placed all authority in the hands of a Central Midwives' Board composed of seven persons, four to be medical practitioners appointed by medical bodies of recognized standing. Of the other three, one at least must be a woman. This board was to act under the approval of the Privy Council and after consultation with the General Medical Council. It defines[17] the most essential requirements for the midwife as: The obstetrical examination, external and vaginal; the delivery of 20 lying-in women under competent supervision, and the following of an equal number of women during the ten days after labor; the candidate must have attended a sufficient course of instruction of not less than three months' duration, and passed a satisfactory examination.

We now see the legal status of the midwife in England to-day. She has a short course of training in any one of the leading lying-in hospitals in England instructed by members of the staff, who are also the professors in the medical schools. This is more or less at the expense of the medical students, who formerly enjoyed more of the professors' time than now.

Let us see how the law has worked out. There are at the present time[18] 29,000 midwives on the roll of the Central Midwives' Board, nearly as many as there are physicians in Great Britain. Thus we find that practically all of the prophetic statements of our authority Fenwick have been fulfilled. We have the statements of two prominent obstetricians in London to the effect that the midwives to-day are doing the bulk of the middle-class obstetrics in England, and not only that, but they are taking care of the children during the first year as practicing physicians. There is also a general complaint among the practitioners that humanity compels them to respond to the summons of the midwife when in trouble, but there is no provision for any compensation for the physician.[19]

So we have in England two standards of obstetrics side by side, but not in harmony. We have a midwife scantily trained assuming the rôle of physician not only within but outside her legal province. That such a profession is remunerative must be admitted when we see the tremendous size to which it has grown, and when we realize that it is increasing much faster than is the medical profession. With such inadequate training and such meager provision made for supervision, working utterly out of harmony with a growing proportion of the medical profession, we can feel certain that the results must be inferior to what we have seen in Italy and Germany.

### UNITED STATES.

In the United States we have at the start one distinct advantage over the older European countries. Although the midwife custom or tradition came over with the early settlers, it was soon shaken off. Let us quote one physician in this Commonwealth, who writes anonymously in 1820,[20] presupposing evidently an agitation of the midwife situation: "The attention of the public having been lately turned to the subject of the employment of female accoucheurs, has led to some discussion among the faculty and others with regard to the safety and expediency of introducing them into the practice of midwifery instead of physicians. There is, perhaps, no place of equal size in which this branch of medical practice has been so entirely confined to male practitioners as in this town [Boston]. In no place perhaps in the world is this standard higher, in no place is the female character more pure and elevated than in this; yet in no place probably is the practice of midwifery more safe."

"No one can thoroughly understand the nature and treatment of labor who does not understand thoroughly the profession of medicine as a whole. He must look upon it with the eye of a physiologist and a physician before he can comprehend its nature, its relations, or its objects."

Again I quote our physician of 1820, long before the days of asepsis and modern surgical obstetrics. He continues: "As medical science has improved, it seems at last to have been settled that physicians regularly educated could alone be adequate to the exigences of obstetric practice. This is the opinion held, taught and defended by the most eminent lecturers on midwifery in Europe.

"The opinion in Great Britain of the profession at large has been expressed in the most unqualified manner. Among ourselves, it is scarcely more than half a century since females were almost the only accoucheurs. It was one of the first and happiest fruits of improved medical

education in America that they were excluded from the practice; and it was only by the united and persevering exertions of some of the most distinguished individuals of which our profession has been able to boast, that this was effected."

After enumerating various emergencies which might arise with or without the midwife's knowledge, and for which the physician is hastily summoned, for the physician in all countries is the last resort, our writer of nearly a century ago says: "No man called in on an emergency like those I have mentioned can be made sufficiently master of the circumstances to be able at once to do justice to himself or to the patient. Much depends always upon the previous history of the case, the course which the labor has taken, the symptoms which have occurred in the course of it. A moment of hurry and of danger like this, when the fear of a fatal issue is the only object before the eyes of the patient, her friends or her attendant, is no time for the communication of a long series of facts, no time to enter into the whole details of the labor. And besides this, none but the accoucheur herself is a competent judge when the assistance of a consultation is required, and she will very naturally be desirous to put off as long as possible the moment when she is to acknowledge herself incompetent to the further management of the case."

In conclusion, our far-seeing friend of 1820 writes: "It is now to be determined whether, when the most rapid advances are making in learning and knowledge, when new opportunities are opening for the improvement and cultivation of medical science, when the members of the profession are becoming better educated and better fitted for its duties, society will choose to go back for half a century and adopt a practice which experience has shown to be unsafe and pernicious."

After ninety years we of the medical profession whose especial duty it is to protect the welfare of the hopeful mother and her unborn child are brought to face the same problem. Shall we who enjoy the many improvements in medical science, who are "better educated and fitted for its duties," who enjoy "the advances in learning and knowledge," and who realize much more fully than our wise and loyal medical predecessor of nearly a century ago possibly could realize the responsibilities of the more intricate, the more complex and the more difficult methods required by modern obstetrics, and who look forward to far greater advances in preventive obstetrics, whereby the skill and judgment of the obstetrician shall be trained to foresee and forestall the many dangers to the coming mother; shall we, I say, let down the bars, shall we take the weaker course and compromise the birthright bequeathed to us by such worthies?

But to return to our history. What influences in society have again raised this question, and what new arguments do they bring?

With the stream, or, better, the mighty river of emigration which has swept into this country within the last half century, has come very naturally the midwife-habit and the midwife. In all the large cities or centers of foreign population these midwives have quietly plied their trade, commonly unrestricted, unsupervised and unmolested.

Not till the present wave of prophylactic medicine with its searchings for the causes of disease, be they pathological, social or criminal, did the midwife come strongly into official light. The investigation of infant mortality, ophthalmia neonatorum, of puerperal fever and finally of abortion, have pointed a finger at the midwife as a large factor in the etiology of all these misfortunes. I hasten to add that the midwife is not the only offender. A certain percentage of registered, though ill-equipped, physicians undoubtedly plays a large part in these generally preventable misfortunes, and we feel that any measures undertaken for the improvement of obstetrics in this state should take into consideration both classes of offenders.

The forces now at work uprooting this ancient question are those of the modern efficient charity organization demanding the uplift of the poor, demanding the care for the mother and child; they are the irresistable forces of humanity and right, and we welcome them as friends. We believe it is through such forces, in co-operation with the medical profession, that our best hopes for improved obstetrics lie. But we feel sure that when the situation is clear, intelligent treatment will be sought by other means than the midwife. We agree with the committees of these organizations, who are wisely allied with experienced men of our profession, that the first step, as in any sociological problem, is to obtain full information as to the present abuses and dangers to which the poor lying-in patient may be subjected. Investigation and discussion must precede intelligent action.

Let us first see what our sister states have done in this regard, and with what results. It seems worth while to go into considerable detail in one state so that we may have a standard to which we may compare other states.

### *Illinois.*

We have selected Illinois as a favorable example of the attempts in America to license, control and regulate the midwife.

Before 1899 there was no official recognition of the midwife, a situation by no means uncommon in the United States to-day.

The Act of 1899 licensed midwives in Illinois, and required registration, but made no provisions for supervision, education or control. After a few years under this law a Committee on Criminal Abortion was appointed by the Council of the Chicago Medical Society. This worked with partial success, aiding the police in prosecutions, procuring the removal of advertisements from the press by moral suasion and with the co-operation of the postal authorities.

They soon found that abortion by midwives was very common and that the midwives as a class were deficient in knowledge and ability.

Inquests showed that they practiced medicine and that they cared for abortions and miscarriages, while the law limited their powers to the care of full-term normal labor. As a result of the information obtained by this abortion committee, a joint committee on midwives was formed of members from the Chicago Medical Society and the Hull House, and an investigation instituted, with the result that in 1908 the careful report of a paid investigator was published.[21]

This report states "that the laws governing the practice of midwifery are utterly absurd and inadequate, as is evident when compared with the requirements for obstetric practice by doctors of medicine." A striking contrast is drawn between the training of the medical student with the requirements of a midwife. The report shows careful, thorough and accurate work as far as such an investigation could well go. A trained nurse interviewed 223 midwives, and a woman detective saw as many of these as possible. Card blanks were filled out for each midwife. It was estimated that between 500 and 600 midwives were practicing in Chicago. Of the 223 midwives visited, only 9% were properly registered; 47% of all births in Chicago were reported by midwives.

Only 81 of the midwives were able to read and write English, while 103 could read and write their native language only. One could not read or write her own language; 168 could speak English, while 29 could not; 74 were dependent upon their practice for a livelihood, while 107 were not; 138 lived in good homes and were neatly dressed; 36 were only fair in this regard and 19 were distinctly bad. Of these 223 midwives, 10% were willing to conduct abnormal cases, dilating on their ability to perform version, to deliver a breech or transverse presentation, to remove an adherent placenta or stop a postpartum hemorrhage. The detectives found that 49 agreed to do abortions; 19 received patients into their homes contrary to law, and these homes were practically abortion shops. One, with a policeman husband, leading a dissolute life, showed proudly her license to practice from the State Board; another midwife, while she refused to do an abortion herself, introduced the detective to her physician husband, who agreed to sell her a drug for $3.00 which was guaranteed to bring on an abortion.

Sixty-seven of these midwives held diplomas from foreign schools for midwifery; 111 from schools in America, while 6 held no diplomas. Seven of these American schools in Chicago were investigated. They were veritable diploma mills. The time required for the course was six months, and the fee from $100 to $175. There were three or four hours of instruction weekly. In two of the schools no textbook was used. Thus without being able to read or write, a diploma could be obtained. No practical experience was required by the law in Illinois, although some of these schools furnished it when possible. These 111 American diplomas merely show, then, that these midwives had the money to pay.

One physician in charge of a popular school in Chicago from which many diplomas were seen, offered for an additional fee to instruct the supposed candidate privately in the *modus operandi* of successful abortion work, telling her that it would bring her in large returns, that it was a perfectly safe venture and that the midwives who were caught were fools. Collusion between midwives and physicians for abortions were found, the responsibility and the spoils being divided. An Italian midwife on a labor case informed the ignorant, unsuspecting patient that complications had arisen and called a certain physician who was her accomplice. He operated on a normal case, charged the maximum fee and divided with the midwife.

The investigator closed her report by saying that the most important duty of the state, after examining and licensing the midwife, was to regulate and uplift her, and thus protect the ignorant, credulous community.

The conclusions of the committee of the Chicago Medical Society were that the Illinois law gives no power to inspect and control midwives. They suggest as remediable measures:

1. A short-term license to be issued, thus requiring relicensing at frequent intervals.
2. That a representative of the State Board of Health with the necessary assistants and inspectors be charged with the condition of the midwife practice.
3. That the State Board of Health should make the necessary rules to govern the practice.
4. That the State Board of Health must have control of the education of the midwife, recognizing only the midwife schools of proper standing. Repetition courses every two to four years, with sessions of two to four weeks, should be required.

Thus we have in Illinois a condition of affairs perhaps worse, save only in numbers, than England before the Law of 1902. Can Illinois by these proposed laws hope to approach the situation in Germany?

### *Michigan.*[22]

In Michigan, over 12% of all births for the first three months in 1908 were conducted by midwives. In Detroit many had signs in front of their houses, and all claimed without exception to take complete charge of normal obstetrical cases without a physician. All were foreigners in Detroit: Bohemians, Poles, Germans and Russians, some unable to speak English. Thus we see a condition, without going into further details, closely resembling the situation in Chicago. However, the law in Michigan does not recognize the midwives, and there is no system for their licensing and regulation.

Ohio, Indiana and Wisconsin all have laws for examination and licensing the midwives.

### *New York.*

Coming nearer home, let us glance briefly at the situation in New York state. For many years there has been special legislation regulating the practice of midwives in five of the western

counties. These laws, however, have not been enforced and the situation there has been quite as bad as what we have found in the states of the Middle West.

In 1907 the New York branch of the Health Defense League made an extensive investigation of the situation of the midwife in New York.[23] This investigation revealed the fact that in New York City there were over five hundred midwives practicing in a way similar to what we have reported in Chicago. There were also four midwife schools in New York City. These schools were as thoroughly bad as the ones we have already described.

As a result of this investigation, a midwife law was passed in June, 1907, investing the Department of Health of the City of New York with power and authority to adopt rules and regulations governing the practice of midwifery in New York City. As a result of this law the Department of Health has adopted and published a book of rules governing the practice of the midwife.[24]

Under these rules no person other than a duly authorized physician shall engage in the practice of midwifery without a permit from the Board of Health. To obtain such a permit, an application must be made, certified to by two regularly licensed and registered physicians, and by one reputable and responsible layman. The applicant must be twenty-one years of age, or over, and of moral character; she must be able to read and write; she must have attended, under the instruction of a physician, at least twenty cases of labor, and have had the care of at least twenty mothers and newborn infants during the lying-in period (ten days). This permit to practice is good for one year only, and must be renewed at the end of that time. The Board of Health has the power at any time to revoke this permit. Before a permit is given, the applicant must appear in person at the Department of Health and register her name and address.

In the regulations which she must follow, it is distinctly stated that she is allowed only to attend normal, uncomplicated cases; in all others she must call a physician.

The home of the midwife, her equipment, record of cases and registry of births shall be at all times open to inspection by the authorized officers and agents of the Department of Health. Explicit directions are given for the conduct of normal cases during pregnancy, labor and the puerperium. She is also required to take the temperature morning and night for five days following labor. During this time, or at any later period, should the temperature reach or exceed 101° and continue at this for twenty-four hours, the case must be reported to the Department of Health.

Thus we see some slight provision made for the training of the midwife, no provision made for examination, but excellent rules for her regulation. Exactly how well these laws have been carried out, and with what results, we have been unable to ascertain.

*Maryland.*

Let us briefly trace her history. Before 1894 no restriction or legalization of the midwife is found. Since 1894 there has been a law in Maryland requiring midwives and nurses to report at once to the health officer, or a legally qualified physician, any "mattering or inflammation" about an infant's eyes occurring within two weeks after birth. The midwife was forbidden to use any treatment on her own initiative. From this law five or six convictions have resulted in Baltimore in fourteen years. However, ophthalmia neonatorum was found to be the chief cause of blindness, and 77% of these blind children were born under midwife care and 23% under physicians. With the exception of this law for the control of blindness, the midwife was in no way restricted in Maryland before the present year, 1910.

In 1906 the committee of the Evening Dispensary for working women and girls, in cooperation with the Mothers' Relief Society,[25] found, early in their service, that the conditions of the practice of the midwives in Baltimore city were, in the light of twentieth century medicine, well nigh intolerable. They, therefore, in 1908 employed a trained social worker, who interviewed 150 midwives, with the following resulting report:

First, 40.7% of the births reported at the Board of Health in Baltimore were by midwives.

Second, registration was inadequate.

Third, no qualifications were required for registration of the midwife; 42 had foreign diplomas; 9, American diplomas; 66% gave no evidence of training of any kind; 24.7% could neither read nor write; 16.7% could not speak English.

Fourth, no supervision was provided. There was only the 1894 law providing a penalty for neglect of the infant's eyes. But only 3% of the 150 midwives used a weak solution of nitrate of silver. The remainder used anything from breast milk to bichloride of mercury of unknown strength. Sixty per cent cared for abnormal cases, did versions, removed, manually, delayed placentas. Inspection of their bags showed 41 clean, 51 dirty, 44 had none, a few used antiseptics for the hands and sterilized the tie. The report adds that "on account of lack of supervision, even well-trained midwives take no precautions to insure asepsis." One foreign midwife showed a sterilizing apparatus, required in her native country, the use of which in her adopted country, she said, would expose her to ridicule.

The Medical and Chirurgical Faculty of Maryland,[26] stirred by this report, proposed and backed a bill which was passed by the General Assembly and went into effect July 1, 1910. The Faculty recommended the passage in the following dubious terms, in part: "Midwifery is in many respects the most important branch of the practice of medicine, and hence it seems strangely inconsistent that its legal regulation is far less stringent than that of medical practice in general."

Let us pause a moment to say that it seems to us "strangely inconsistent" that the Medical Faculty of Maryland should make such a statement in furthering a bill to provide legal recognition for a class of practitioners, proved by the report, on which the plea is based, to be far from satisfactory, and often untrustworthy and even criminal. These practitioners are to be allowed to practice midwifery, which the Faculty themselves say "in many respects is the most important branch of the practice of medicine."

The Faculty continue, "There is scarcely a physician in active practice who has not been impressed with the penalties which the women of the state pay for the negligence of the state in throwing proper restrictions about the practice of midwifery; the deaths, the unnecessary invalidism, the preventable blindness." They give the following example: "Some years ago Dr. C. Hampton Jones, Assistant Commissioner of Health in Baltimore city, reported a series of 32 cases of tetanus neonatorum which occurred in Baltimore during one year. Of these, 28 occurred in children less than twenty-one days old, and 12 occurred in the practice of one midwife alone."

Apparently the dread of injuring the few midwives and the fear of failure to secure any legislation outweighed in the minds of the Faculty the dangers of the "penalties which the women and children of the state pay — in deaths, unnecessary invalidism and preventable blindness." They state their attitude thus:

"It must not be assumed that the *medical profession* is bent upon the complete extermination of the race of midwives. Such an assumption would be both unfair and untrue. The profession is convinced that for the present the midwife is to be regarded as *more or less inevitable*, and it also realizes that not all midwives are equally culpable. But, like all other laws, the midwifery act is intended to regulate the midwives who need regulation, rather than those who, in their own limited sphere, may be efficient and conscientious. Of the latter class, it is safe to say that none will have any difficulty in fulfilling the requirements outlined in the bill. Furthermore, it is to be remembered that the law, if enacted, will not affect those midwives now in practice, except to necessitate their re-registration."

Turning now to the law itself, we find provision for the licensing without examination all midwives practicing at the time the law goes into effect. Others registering after that date must undergo an examination by the State Board of Health, requiring at least the ability to read, write and make out correctly a birth certificate. Further, the applicant must present a certificate from a legal practitioner or a maternity hospital that five cases of childbirth have been attended, and that he or she is competent to attend ordinary cases of labor. Such applicant shall also be required to present certificates from three reputable citizens, stating that the applicant is of good moral character.

Perhaps the most interesting clause in this act follows: "It shall be unlawful for any midwife to make a vaginal examination, to attempt to deliver a retained placenta, to attempt to use forceps, to attempt version or any forcible delivery, but such midwife shall, in all cases of labor that are not normal, notify a licensed practitioner of medicine."

No provision is made for the training of the midwife, yet she is required to diagnose the abnormalities of obstetrics, and that without a vaginal examination.

The only redeeming feature which we can find in the law is that the Board of Health can make the examinations of whatever standard they think desirable, and thus can require the same training and knowledge as is required of medical practitioners for similar work. Let us see how the Board of Health uses this power of examination: In November just past, the first test was held. This examination was, however, a test of whether she could read and write English, and little else.

We believe that the Faculty of Medicine of Maryland intended to protect "the women and children of the state from paying" for neglect by deaths, unnecessary invalidism and preventable blindness. How have they succeeded? They have sanctioned and legalized without any test of fitness, or any requirement or means for their education or improvement, all those very women under whom the "well-nigh intolerable" conditions existed, and in our opinion they have provided for and encouraged many more such women for the future, who should make these conditions completely "intolerable." They have perpetuated a system well calculated to *protect the midwife*, who extorts from the women and children of the state the deaths, invalidism and preventable blindness.

### *Massachusetts.*

Let us now turn lastly to the situation, past and present, in Massachusetts. From our cited authority of 1820,[20] as well as from colonial documents, we know that the midwife flourished in the early history of the colonies. Special provisions were made at toll bridges and ferries for the midwife, as well as for the physician, but evidently about 1770 she ceased to play such an important part, at least in the region about Boston. Thus in contra-distinction to the popular supposition, we are here, as in many of the states in the Middle West, dealing, not with a survival, but with an importation, which is the direct result of immigration.

In 1894, in the laws passed for the registration of physicians, there is no mention made of the midwife. Whether intentionally or not, she was thus excluded from the legal practice of her profession. That this law is valid we have ample proof, for she has been prosecuted and convicted of practicing medicine without a license. But, with curious inconsistency, in the law for registration of births, her existence is admitted, and she is allowed to sign these blanks.

The midwife not only exists, but flourishes in

Massachusetts at the present time, in opposition to the law, which we find has been rarely enforced. The Commission for the Blind in a recent investigation has found this to be true. They consider that at the present time about 150 women are practicing midwifery in the state of Massachusetts. They are scattered widely throughout the state, probably some 25 are practicing right here in Boston, although we find that in the past year only 9 have signed birth certificates. They exist also in Lawrence, Lowell, Fall River, Gardner, Ware and New Bedford. Some of these women are apparently doing good obstetrical work; on the other hand, many are quite similar to those we have described in New York and Chicago.

The results of this investigation have led the Commission for the Blind to feel that the situation in Massachusetts is a serious one, and demands alteration. The Women's Municipal League also has encountered the midwife problem in the pioneer work it has been carrying on of caring for its pregnancy clinic. It was through the activities of these two organizations that we became interested in methods for the solution of the existing evil, and through the co-operation of a member of the Commission for the Blind that we were invited to read this paper to-night.

### LEGAL SITUATION.

Before taking up possible means of improving the situation in Massachusetts in solving our present difficulty, let us take a look at the more strictly legal aspect of the situation. Of the other states in the Union, fourteen recognize the midwife by expressly exempting her from the provision of the medical act. Most of the states ignore the situation entirely; probably in many of these the midwife plays a very unimportant rôle, if any at all.

In the few states that have attempted to license and regulate this class of practitioners, their attempts in the light of what we have seen in other parts of the world are pitifully futile. No state has successfully solved the problem. Those that have passed laws for their regulation throughout the state have, in our opinion, made the solution of the problem more difficult.

We in Massachusetts are in a most fortunate and enviable position. In the first place, the number of midwives existing is small and without influence. They are practicing in open defiance of the law. In excluding these women from practice by enforcing the law, we would not be depriving a large class from earning their livelihood. Neither would we be depriving any considerable portion of society of proper care. We are particularly fortunate in having a definition of the practice of medicine handed down by the Supreme Court of our Commonwealth, directly applying to the practice of the midwife. The following is a quotation from the opinion handed down by Mr. Justice Rugg. He writes:[27]

"Revised Laws, Chapter 76, Section 7, mentions obstetrics as one of the subjects of examination for the purpose of testing an applicant's fitness to practice medicine. This goes far towards showing that obstetrics is a branch of the practice of medicine. It requires no discussion to demonstrate that when, in addition to ordinary assistance in the normal cases of childbirth, there is the occasional use of obstetrical instruments, and a habit of prescribing for the conditions described in the printed formulas which the defendant carried, such a course of conduct constitutes the practice of medicine in one of its branches.

"Although childbirth is not a disease, but a normal function of women, yet the practice of medicine does not appertain exclusively to disease, and obstetrics, as a matter of common knowledge, has long been treated as a highly important branch of the science of medicine."

There have been at least two convictions in the state under the present law.[28] But while this shows that prosecutions are possible, it is admittedly a fact that such a process is by no means easy.

Complications in the legal machinery, not to say defects, make it difficult to bring the midwife before the bar of justice. In the first place, there is no easy method of lodging a complaint. The Board of Registration of Physicians is not empowered to discover violations of the law relating to the registration of physicians. That law distinctly states[29] that the board shall investigate all complaints of the violation of the law and report the same to the proper prosecuting officers. Thus the board does not act until a complaint is brought to them that an individual is practicing medicine without being properly licensed. Then, and not till then, it has the power to act, but persons are not anxious to go out of their way to stir up trouble unless some flagrant case arises. Should the physicians at large know that they can bring in a complaint to the Board of Registration, and yet conceal their identity, possibly more complaints would be made and more cases prosecuted.

But it is also difficult to secure sufficient data to bring about a successful prosecution. The present law for the registration of births allows so much time to elapse before the certificate must be handed in that it is often difficult to trace the case.

But more important than all is the fact that public sentiment is not sufficiently aroused to make convictions popular. In many localities officers of the law are unwilling to prosecute cases even when the law and its violations are directly brought to their attention. In one city in Massachusetts when the city marshal was informed of the law and the fact that a midwife was openly violating it, and that by a decision of the Supreme Court the midwife was liable, he replied that in his opinion the judge who would make such a decision merely gave evidence of intoxication. When such is the popular feeling, we cannot expect much result from the laws as they now exist, or in mere modification of the law. What we must first do is to arouse public sentiment, and first of all we must have the

enthusiastic support and united action of the medical fraternity.

That the situation in Massachusetts is in need of improvement, we admit most frankly. We also feel that minor changes in the present laws cannot be made too quickly, and we urge strongly that side by side with the education of the community to combat this evil should go changes in legislation which will make the laws consistent and easier of enforcement.

We feel that the most important change should be in the laws governing the registration of births. The word "midwife" as it occurs, should be at once erased from the statute books. The certificates of birth should be returned by the physician promptly; the form of the certificate could also be improved by providing a means of identification of the person actually responsible for the delivery of the patient. We also feel that theoretically better results would be obtained should the birth certificate be inspected by the board of health within three days of the birth of the child. Under the present law death certificates have to pass through this channel, and suspicious cases are referred by this board to the medical examiner. Would not inspection of birth returns by the board of health assist in furnishing evidence useful in the prosecution of questionable practitioners?

Another law which we feel could easily be amended and which would give better results is one to strengthen the Board of Registration in Medicine. This might read something as follows:

"An Amendment to the Revised Laws, Chapter 76, Section 6.

"It shall be the duty of the board furthermore to keep itself informed of the condition of the practice of medicine throughout the Commonwealth, to the end that illegal practice of medicine, as defined in this law, may be prevented. In order to secure the information required by this act there may be expended a sum not exceeding $2,000 annually."

Above all, we must make the physicians of Massachusetts thoroughly aware not only of the existing conditions of midwifery in Massachusetts, but of how they can aid by doing their duty in the enforcement of the law to the benefit of the community. In those cities and towns where the problem is greatest, the physicians should see to it that provisions are made for an out-patient, lying-in department as an accessory to the local hospital.

A brief study of such institutions in Boston would show how easily such a department can be carried out, and how easy it would be to make it practically self-supporting, and what a benefit such an institution would be to their community. The professors of obstetrics in the medical schools of Massachusetts should impress upon their students not only the importance of post-graduate work in a lying-in hospital, but also where in the state such appointments can be had. Thus by co-operation between the local practitioners in the communities where the midwife now flourishes, and the professors and students of our medical schools, not only could the present midwife situation be greatly improved, but also the medical student would have a better opportunity to obtain training in this important branch of medicine.

## CONCLUSION.

In reviewing the midwife situation abroad and in our own country, much has been said, but far more might be said of the unsatisfactory condition of obstetric practice wherever the midwife exists. Two standards of skill and a divided responsibility inevitably are found. The midwife must either be a competent, trained obstetrician, or she must become a subordinate, co-operating with the obstetrician, as does our excellent trained obstetrical nurse, relying on his judgment and resting with him the responsibility of the two lives, before a system harmonious and satisfactory can result.

The history of temporizing with the ignorant, half-trained, often malicious midwife in our sister states to-day reads like many another misguided "freedom" which is virtually a license by the state to practice quackery on an ignorant, unspecting public. The women and infants pay for this "freedom" in deaths, unnecessary invalidism and blindness.

Who are to blame? Is it the ignorant public? Shall we blame the legislators? We believe it to be the duty and privilege of the medical profession of America to safeguard the health of the people; we believe it to be the duty and privilege of the obstetricians of our country to safeguard the mother and child in the dangers of childbirth. The obstetricians are the final authority to set the standard and lead the way to safety. They alone can properly educate the medical profession, the legislators and the public.

A resolution of the Women's Municipal League awaits only a formal endorsement to urge the importance of legislation, not for the licensing and regulating of the midwife, but for such minor changes in the laws as will make the present statutes effective in dealing with the midwife in Massachusetts.

It has remained for this and other active charitable organizations to point out the necessity for bettering obstetric conditions in the state. Let the medical profession, we urge, not only co-operate with these forces for good, but let us obstetricians consider well the situation in obstetrics throughout the state to-day; let us look into the future and consider means for furnishing efficient trained service to rich and poor alike.

Our worthy predecessors of this town,[20] a century and a half ago, retired the midwife to oblivion as having passed her age of usefulness. Oliver Wendell Holmes[30] over seventy years ago, by his monograph on the "Contagiousness of Puerperal Fever," led the world to the safeguarding of the mother during childbirth.

Two recent papers, "When to Interfere in Pregnancy and Labor,"[31] and "The Fundamental Conceptions which should Govern Modern Obstetric Practice,"[32] read by two members of this society, are convincing proof that the best knowl-

edge of practical obstetrics to-day is here available, and, moreover, the lines for advance are being laid out for the future.

A golden opportunity awaits the obstetricians of Massachusetts to-day to carry on this high standard. Our already fairly satisfactory system should be maintained and advanced along the lines of the most progressive sociologic, economic and obstetric knowledge of the day.

Thus Massachusetts may be kept in her position of leader, guide and example of the best, safest and most efficient system of obstetric practice in this country and throughout the world.


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## SOME PRACTICAL POINTS IN CONNECTION WITH DISLOCATION OF THE HIP, AND ITS REDUCTION BY THE METHOD OF BIGELOW.

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IT has often occurred to me that the subject of dislocation of the hip, as it is treated in textbooks, has been made so complicated that the student who tries to understand it, and even the practitioner who wishes to refresh his memory, can hardly grasp the essential points in such a manner as to be much use to him in practical work. It is for the purpose of presenting a simple clinical classification, and also an easy method for remembering the steps in reduction (the Bigelow method is the one here especially referred to), that this paper is written.

For many years I have been in the habit of demonstrating on the cadaver, before the classes in surgery at the Harvard Medical School, the different dislocations of the hip, and also the methods of reduction. The experience acquired in this way, and also in connection with a number of cases which I have seen and treated, has convinced me that, for practical purposes at least, dislocations of the hip (so long as the Y ligament is unruptured) may roughly be divided into *two classes:*

1. Those dislocations in which the head of the femur lies behind the acetabulum.

2. Those dislocations in which the head of the femur lies in front of the acetabulum.

Any dislocation belonging to the first class is called a *posterior* dislocation; and any dislocation belonging to the second class is called an *anterior* dislocation.[1]

In each class there are several varieties according to the exact position of the head of the bone. For practical purposes, however, it is seldom necessary to consider a dislocation more in detail than to note that it belongs either to the class of posterior dislocations or to that of anterior ones.

The *posterior dislocation* is comparatively common; almost all the dislocations which one sees or hears of are of this variety. The appearance of such a dislocation is very characteristic. The affected limb is strongly inverted, and its slightly flexed knee is carried across the other knee. The limb is rigid, the thigh is somewhat flexed at the hip, and the rounded head of the femur can be felt on the dorsum ilii.

The *anterior dislocation*, in any of its forms, is extremely rare. Many a surgeon of large experience has never seen a case of it. The whole limb is more or less everted, and efforts to invert it meet with resistance which cannot be overcome. The leg is away from the median line of the body, and the internal condyle of the femur (which, as Bigelow pointed out, always looks in the same direction as the head of the bone) exhibits a tendency (always present, but more pronounced in some cases than in others) to face forwards. In well-marked cases the head of the bone may be felt just below Poupart's ligament.

It is generally agreed that almost all dislocations of the head of the femur, when the Y ligament is not ruptured, begin in the same way: that is to say, the head of the bone breaks through the lower part of the capsule and then goes backwards or forwards according to the character and direction of the forces applied to it.

Usually the *diagnosis* of dislocation of the hip is easy enough. Occasionally, however, there are cases in which the real condition is not entirely clear. Under such circumstances a skiagraph, including both hips, may remove the doubt. An examination under ether, when the muscles are relaxed, may also be of assistance.

For the *reduction* of a hip dislocation the patient is placed upon a blanket spread on the floor and a pillow is put under his head. He is then etherized until his muscles are thoroughly relaxed.

[1] Allis, in his classical work on the hip (the Samuel D. Gross Prize Essay, 1895), expresses his conviction "that all conceivable dislocations are primarily either inward or outward, and that from these primary positions the head may be secondarily shifted to any point above the socket within the reach of the remnant of untorn capsule that binds the shaft to the rim above the socket."

I have used the words "anterior" and "posterior" as being, in my opinion, preferable from a clinical point of view. Certain possible dislocations, such, for instance, as those classed by Allis under the headings "reversed thyroid" and "reversed dorsal," would probably find no proper place in the classification I have suggested; but such dislocations must in practice be so extremely rare that they can be neglected.

The surgeon, realizing that the displaced head of the bone must be made to return to the socket by the same route which it made for itself on leaving it, decides how he will manipulate the leg in order to bring about this result. He stands on the patient's left side,[2] with his left foot advanced close to the patient's pelvis, and, while an assistant holds the pelvis firmly to the floor, he firmly grasps the lower leg (his right hand being around the leg just above the ankle and his left one supporting the leg just below the tuberosities of the tibia) and flexes the lower leg at the knee and the thigh at the hip. In the process of doing this, however, he should make the patient's knee describe a horizontal curve, which is either *inward or outward* according to the dislocation. At the end of this maneuver the head of the bone is presumably just beneath the torn part of the capsule, and, therefore, the surgeon then forcibly *lifts* the thigh directly upwards,[3] when the head of the bone usually slips into its socket. A folded towel should now be placed between the two inner malleoli, and the ankles bandaged loosely together.

The point in all this which seems to be most difficult to remember is whether the surgeon, when he flexes the thigh upon the pelvis, should make the knee describe an *inward* or an *outward* curve. It is one of the objects of this paper to suggest a simple rule for remembering this point.

If, as the patient lies etherized on the floor before him, whether the dislocation is posterior or anterior, the surgeon will imagine that there is, on the exposed side of the patient's lower leg, an arrow *pointing towards the knee* (when that knee is flexed), this arrow will indicate the direction in which he is to carry the knee while he is flexing the thigh upon the pelvis. By consulting Fig. 1, which shows a posterior dislocation, he will see that during flexion the knee should be made to describe an inward curve (internal circumduction of the femur). On the other hand, by consulting Fig. 2, representing an anterior dislocation, he will see that during flexion the knee should be made to describe an outward curve (external circumduction of the femur).[4]

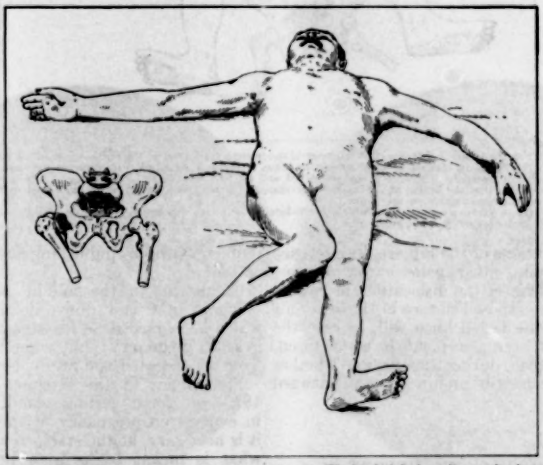


FIG. 1. Posterior dislocation of the head of the femur. The head of the bone lies on the dorsum ilii, and, as the Y ligament is unruptured, the thigh is strongly inverted. The knee is flexed and the foot rests upon its inner border. The arrow indicates that flexion at the hip-joint preliminary to reduction should be accomplished by internal circumduction of the femur.
[Drawn from a cadaver upon which this posterior dislocation had previously been produced.]

## CONCLUSION.

The points which in this paper I wish especially to emphasize are (1) that, for practical purposes,

[2] If the left femur has been dislocated, the surgeon stands between the patient's legs.

[3] It is oftentimes better at this stage for the surgeon to slip his left forearm under the upper part of the patient's lower leg so as to get more power in lifting.

[4] Some surgeons claim that during this excursion of the head of the bone the sciatic nerve or some other structure may be caught, and, therefore, they prefer Allis's method of reduction. My reason for employing the Bigelow method is that I am more used to it than I am to that of Allis, and also because personally I have only once found much difficulty (although, of course I may at any time meet with it) in reducing dislocations by Bigelow's technic. Allis's method, which may be used instead of Bigelow's, or in the event that the Bigelow fails, is, as I understand it, as follows:

*For posterior dislocations:*

(1) Flex thigh to a right angle.
(2) Turn lower leg outwards until it is at right angles with the body (keeping thigh vertical). This is done for the purpose of freeing the sciatic nerve or any tendons that may be caught over the head of the bone.
(3) Lift up thigh vertically (in order to bring head opposite acetabulum).
(4) Turn lower leg inwards until it is again in the axis of the body. During this process the lifting should be continued.
(5) Extend thigh.

*For anterior dislocations.*

(1) Flex thigh to a right angle and make traction in axis of femur.
(2) Assistant pushes head of bone into acetabulum.
(3) Adduct thigh.
(4) Extend thigh.

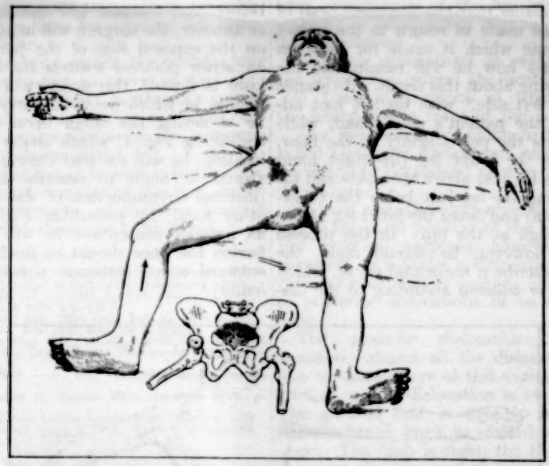


FIG. 2. Anterior dislocation of the head of the femur. The head of the bone is just below Poupart's ligament, making a visible projection there. As the Y ligament is unruptured the thigh is strongly everted. The knee is slightly flexed and the foot rests on its outer border. The arrow indicates that the flexion at the hip-joint preliminary to reduction should be accomplished by external circumduction of the femur.
[Drawn from a cadaver upon which this dislocation — a very extreme type of anterior dislocation — had previously been produced.]

all regular dislocations of the hip are, in reference to the acetabulum, either *posterior* or *anterior;* and (2) that, whichever the dislocation, an imaginary arrow on the exposed surface of the lower leg pointed toward the flexed knee will, in case the Bigelow method of replacement is to be used, remind the surgeon during the flexion whether to make the knee describe an inward or an outward curve.

## OVARIAN PREGNANCY. REPORT OF A CASE.

BY ERNEST BOTEN YOUNG, M.D.,
*First Assistant Visiting Physician for Diseases of Women, Boston City Hospital; Instructor in Gynecology, Harvard Medical School;*
AND
LAWRENCE J. RHEA, M.D.,
*Instructor in Pathology, Harvard Medical School; Pathologist to the Children's Hospital, Boston; Assistant Pathologist, Boston City Hospital.*

THE Arabian physician, Albucasis, of the eleventh century after Christ, is said to have first described extra-uterine pregnancy, but it was not until at the beginning and end of the seventeenth century that ovarian pregnancy was mentioned by Mercerus and St. Maurice, in 1614 and 1682 respectively.

Velpeau, in 1835, and Mayer, in 1845, expressed the opinion that none of the previously reported cases could be considered as undoubtedly in the ovary; while Lawson Tait, and Bland-Sutton, until recently, held that every ovarian pregnancy had its beginning in the Fallopian tube.

The possibility of ovarian gestation, although denied by English authors until the last few years, has been admitted by most German writers, Kiwisch publishing such a case as early as 1851.

Cohnstein, in the middle of the nineteenth century, first laid down definite requirements, which he regarded as necessary for the proof of ovarian pregnancy; but some of his postulates were not accepted and are evidently inadequate.

Spiegelberg in the *Archives für Gynäkologie*, 1878, set forth certain conditions as essential in every true pregnancy of this type, and since it is necessary, at the start, to clearly understand what is meant by ovarian pregnancy, his requirements are repeated, as they have been generally accepted:

I. An intact tube on the affected side.

II. A fetal sac occupying the position of the ovary.

III. Connection of the sac with the uterus by the ovarian ligament.

IV. A sac wall containing ovarian tissue.

Jacobson adds two additional requirements to those of Spiegelberg, viz.:

(*a*) The fetus visible in a cavity of the ovary.

(*b*) Demonstrable organic connection between fetus and ovary.

Williams has also pointed out that ovarian tissue should be found in "several portions of the sac wall at some distance," as the ovary may be flattened through the pressure exerted by a pregnancy in the broad ligament or tube and apparently form a part of the covering of the fetus, although such would not be in reality the fact.

It is also to be remembered that ovarian tissue, changed by pressure and infiltration, may lose its characteristic structure.

Werth considers the conditions imposed by Spiegelberg too exacting, and allows all cases, with such anatomical relations as demonstrate connection with the ovary and dissociation with uterus and Fallopian tubes (either accessory or the fimbria ovarica), to stand as true examples of this anomaly. However, this question is not yet settled, for opinions still differ as to the acceptance of certain reported cases. Williams and Norris disagree in no less than four instances.

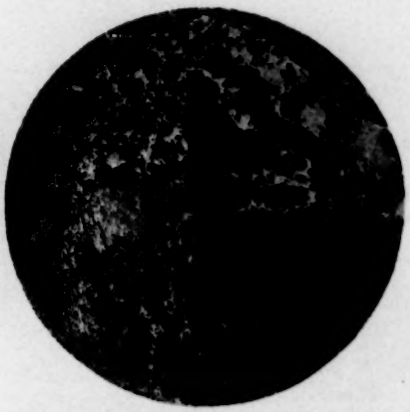
The frequency of this form of extra-uterine follicle; (2) to enter through a rupture which afterward closes; (3) to enter a follicle into which an unruptured follicle subsequently discharges its ovum. There is said to be no definite decidua formation in the process of implantation, the villi forcing their way into the blood vessels, as in uterine gestation.

The theory of Webster, that Müllerian tissue must be present for the implantation and development of the impregnated ovum, is not generally accepted.

OVARIAN PREGNANCY — YOUNG



SECTION 1. Showing normal lumen of tube.



SECTION 1. Another field. Showing cyst wall with chorionic villi immediately beneath the tube.

(including 44 extra-uterine pregnancies, 58 hemorrhagic cysts of the ovary and 62 small ovarian tumors) only 1 ovarian pregnancy came to light.

Of a large number of such specimens from the Gynecological Service at the Boston City Hospital, and examined in the Pathological Laboratory, not one has shown any evidence of pregnancy.

It is hardly necessary to say that the earlier the stage of pregnancy, the more certain the diagnosis.

The theories as to the manner of occurrence are pure conjecture. The spermatozoon is supposed: (1) to enter the unruptured Graafian

each side, and an enlarged left ovary. The appendages and uterus were quite movable and the old inflammatory process seemed quiescent. No special tenderness on examination.

A few days later I saw her at a private hospital, and found the mass on the left side of the pelvis much increased in size and quite symmetrical, but the exact limits ill-defined. The ovary on the right was enlarged.

Ectopic pregnancy was considered in the case; but as the physician, who had known her for some time, did not think this probable, and the patient denied any such possibility, a cyst was considered as a possible diagnosis.

The following day the abdomen was opened and a small amount of black fluid blood was found at the



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Werth considers the conditions imposed by Spiegelberg too exacting, and allows all cases, with such anatomical relations as demonstrate connection with the ovary and dissociation with uterus and Fallopian tubes (either accessory or the fimbria ovarica), to stand as true examples of this anomaly. However, this question is not yet settled, for opinions still differ as to the acceptance of certain reported cases. Williams and Norris disagree in no less than four instances.

The frequency of this form of extra-uterine pregnancy is given in a recent textbook on obstetrics as 4.8%, and if all reported cases are accepted, such may be correct; but if the proofs required by Spiegelberg and Jacobson are strictly followed, the percentage is far too great, for earlier writers included simple dermoid cysts in their series, and there are many questionable cases in medical literature, within sufficient data, both anatomical and microscopical.

Williams found only 3 cases published in England during the nineteenth century: 2 by Granville in 1834 and 1 by Oliver in 1896. In the United States, Thompson, in 1892, published the first indubitable case, since which Webster, in 1904 and 1907, Norris and Mitchell, and Jacobson, in 1908, Morris, in 1909, have presented well-proven examples.

Williams, after a careful study of the literature on this subject up to 1906, classified only 13 cases as "positive," all of which were carefully described and studied with the microscope. Two of these reached full term; one became a lithopedion and was retained thirty years; the other was associated with an intra-uterine pregnancy which terminated normally. In the last case, several days after the delivery of the uterine child, Ludwig removed, by laparotomy, the living extra-uterine child and also the gestation sac. The other 11 cases all ended before the fourth month. In 4 cases the fetus was still within the ovary.

Norris and Mitchell report, using the classification of Williams, 16 "positive," 15 "possible," and 9 "fairly probable" cases. Since their article, I have been able to find but 3 authenticated cases, those of Jacobson, Norris and Kerr.

The question might naturally arise as to whether this form of ectopic pregnancy would not be discovered more often if the blood cysts of the ovary were examined; but Norris and Mitchell report that in the study of 1,700 gynecological specimens at the University of Pennsylvania (including 44 extra-uterine pregnancies, 58 hemorrhagic cysts of the ovary and 62 small ovarian tumors) only 1 ovarian pregnancy came to light.

Of a large number of such specimens from the Gynecological Service at the Boston City Hospital, and examined in the Pathological Laboratory, not one has shown any evidence of pregnancy.

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The theory of Webster, that Müllerian tissue must be present for the implantation and development of the impregnated ovum, is not generally accepted.

Norris has pointed out, that since nearly one half of the doubtful cases have gone the full term, the ovary accommodates itself to the enlargement of pregnancy more readily than the Fallopian tubes. The present writer would also suggest that this is borne out by the extreme distention undergone in the formation of the large ovarian cysts, although in pregnancy, the changes at the site of the developing placenta, unless favorably implanted, might so weaken the wall as to often cause rupture before adequate distention could take place. In symptomatology, ovarian pregnancy resembles other forms of ectopic gestation, and hence nothing further need be said on this subject.

### REPORT OF CASE.

Z. F., twenty-seven years of age, single, was referred to me by her physician in October, 1908, as a probable case of fibroids of the uterus.

*Previous history.* — Rheumatic fever in 1904, and measles and diphtheria in 1908. Catamenia regular and painless before beginning of present disturbance, with moderate flow for five days. Pain in lower abdomen about one year before irregular flowing began, but no painful micturition or subjective symptoms of acute infection.

*Present illness.* — In February, 1908, had excessive catamenial flow and was curetted by the physician in the town where she was living at the time. Flowing continued at irregular intervals until about ten days before I saw her, but moderate in amount. During these ten days there were three attacks of profuse flow and a slight bloody discharge between times.

*Physical examination.* — Well-developed, rather spare woman. Color fair. Temperature, 98.6°. Heart apex in nipple line; impulse slightly irregular, but of good strength. Systolic murmur at apex; not transmitted. Pulse 80, of fair strength and volume, but slightly irregular. Palpation of abdomen negative. No objective signs of pregnancy.

*Vaginal examination.* — Hymen broken. A slight bloody discharge from the uterus. Uterus 3° retroversion, with tubes somewhat adherent to pelvis on each side, and an enlarged left ovary. The appendages and uterus were quite movable and the old inflammatory process seemed quiescent. No special tenderness on examination.

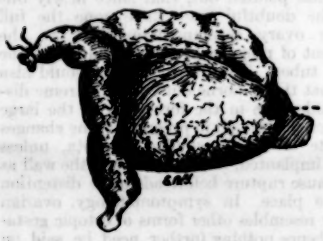
A few days later I saw her at a private hospital, and found the mass on the left side of the pelvis much increased in size and quite symmetrical, but the exact limits ill-defined. The ovary on the right was enlarged.

Ectopic pregnancy was considered in the case; but as the physician, who had known her for some time, did not think this probable, and the patient denied any such possibility, a cyst was considered as a possible diagnosis.

The following day the abdomen was opened and a small amount of black fluid blood was found at the

brim of the pelvis, and abundant evidence of an old pelvic peritonitis. On separating a few recent adhesions, there appeared a large, recent blood clot in the left side of the pelvis, completely surrounding the ovary, which contained what appeared to be a large corpus hemorrhagicum.

The ovary was nowhere adherent to the bowel, and its connection with the uterus and broad ligament appeared normal. The fimbriated end of the tube, on this side, was closed and adherent in the bottom of the pelvis; the remaining portion free, except for a few old, long and light adhesions to the bowel.




Before section.

The sac in the ovary, containing old, black blood clot, was slightly ruptured at its outer end, as shown in the drawing, and from this the blood exuded.

The right ovary was polycystic and contained no corpus hemorrhagicum; but as the ostium of the right tube was injured in the process of removal, its exact condition cannot be stated. It was apparently partially open, but quite firmly adherent to other structures.

A few days later the specimen, which had been placed in formalin, was cut in the presence of Dr. H. C. Low, pathologist to the Children's Hospital, and we both saw the small embryo lying in the rounded space, almost exactly as figured in the article by Jacobson, in the Twenty-fifth Anniversary Publication of the New York Post-Graduate Medical School and Hospital, 1908.

The drawings of the specimen, closed and sectioned, were made immediately and show the exact conditions, except that, by the action of the formalin, the connection between ovary and tube seems more intimate than was actually the fact.

Clinically, this case appears one of true ovarian pregnancy, as an embryo was found in the blood clot contained in tissue corresponding to a part of the ovary, the ovary itself being surrounded by blood clot and connected to no other structure except in the normal manner. The ostium of the tube on the same side was closed; and opposite tube showed no disturbance except such as may come from pelvic peritonitis. The blood clot was entirely about the left ovary and did not reach the tube on the right. The right ovary showed no corpus hemorrhagicum.

The pathological report by Dr. Rhea gives further particulars in regard to the specimen.

PATHOLOGICAL REPORT. (DR. RHEA.)

The gross specimen was delivered to me after it had been in 10% formalin for some time and had already been opened as referred to in Dr. Young's description.

The gross specimen consists of a thin-walled cyst 3 by 2 cm. which had been opened. Loosely adherent to this cyst, but easily separated from it, is the Fallopian tube, which had been cut across near its central portion. The wall of the cyst varies from 3 mm. to 1 cm. in thickness; it is lined by friable blood clot. The fimbriated extremity of the Fallopian tube is occluded. The tube is somewhat tortuous; its lumen is patent and slightly larger than normal; it is free from blood clot. Several sections were taken from the specimen for microscopical examination; the areas examined are indicated upon the drawing of the gross specimen.

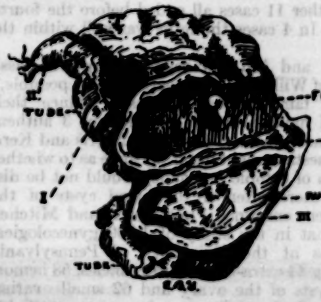
*Section I.* — Central portion of Fallopian tube. A transverse section of the Fallopian tube and adherent cyst wall at this point shows no evidence of tubal pregnancy; the lumen of the tube is patent; its muscular coats are slightly infiltrated by lymphocytes. There are no villi or decidual cells in the coats of the tube. The wall of the adherent cyst described above contains chorionic villi and a large amount of red blood corpuscles. The products of conception do not extend into or involve the muscular coats of the Fallopian tube itself.

*Section II.* — Fallopian tube, proximal region. The lumen is patent and free from blood clot. The muscular coats are infiltrated with small lymphocytes. There are no chorionic villi or decidual cells anywhere in the section.

*Section III.* — Cyst wall. The cyst wall contains smooth muscle of the ovary, dilated blood vessels, a few blood corpuscles in the tissue and an occasional chorionic villus. The wall of the cyst is lined with lamellated blood clot.

*Section IV.* — Cyst wall. The cyst wall is infiltrated with red blood corpuscles. There are no chorionic villi. The cyst is lined with lamellated blood clot.

The gross and microscopical study show, in brief, the following: A Fallopian tube free from blood clot and without evidence of pregnancy having taken place in it. The cyst wall contains recent hemorrhage, and sections I and III show chorionic villi. In Section III the chorionic villi are in tissue that is evidently ovarian. Micro-photographs of Section I are reproduced.




After section. Numerals show site of sections examined.

A very complete bibliography of this subject will be found with the three articles, references to which are given below.

REFERENCES.

Williams: Kelly and Noble's Gynecological and Abdominal Surgery, vol. ii. p. 137.

Jacobson: Contribution to the Science of Medicine and Surgery. New York Post-Graduate Medical School and Hospital, 1908, p. 241.

Norris: Surg., Gynec. and Obstet., 1909, vol. ix, p. 123.

## Clinical Department.

### A NOTE ON THE SYMPTOMATOLOGY OF ABSCESS OF THE LIVER.

BY WILLIAM C. QUINBY, M.D., BOSTON.

ALTHOUGH it is well known that the symptoms caused by liver abscess are frequently vague and perplexing, the clinical picture presented by the following case is sufficiently unusual to make it worthy of record.

A traveling salesman, forty-six years old and married, presented himself for treatment on the 7th of November, 1909, complaining of pain in the epigastrium. Though a resident of Boston, his occupation called him on long active trips through the Middle West, two such being made each year. Before this illness he has needed medical advice on but two occasions since childhood; once three years ago for a pleurisy on the right side from which he recovered entirely in three weeks, and again a year ago for a slight infection of the left hand. His habits had always been good, and he denied having had any venereal disease. He has had no dysentery.

The present illness began during full health, seven weeks before these notes were made, as a severe sharp pain in his "stomach" after a dinner of chicken. This continued through that night and the next morning. There was no vomiting or diarrhea, though he was chilly and thinks that he had some fever. In spite of the fact that he was quite sore to the touch in the stomach region after this, he continued to work for the next three weeks. Though digestion had been normal before this attack, any solid food taken since has caused pain and soreness. Eructations of large amounts of gas also made their appearance. There had never been jaundice, hematemesis or melena. The pain increases markedly on deep inspiration or on stooping to tie the shoes. It has always been localised sharply to an area just below the ensiform. Since the first attack seven weeks ago he has lost twenty-five or thirty pounds in weight, and notices also a marked diminution in strength. The past four weeks have been spent at home loafing about the house, often on the bed and using a linseed poultice. He does not think that there has been any fever since the original attack. The bowels have moved normally and nothing unusual has been noted in regard to the stools. There are no urinary symptoms.

Examination showed a well-developed man, rather poorly nourished, of sallow complexion, looking at least ten years older than the given age. The skin and mucous membranes are not jaundiced. The tongue is coated, the teeth rather poor. The thoracic organs are normal, though breathing seems rather shallow. Volume and tension of the pulse are good; its rate, 72 per minute. Litten's sign is present on each side. The liver dullness extends from the sixth rib to costal margin in the mamillary line. High in the epigastrium is a tumor, smooth and not adherent to the skin, filling the whole region and extending about 10 cm. downward from the ensiform. It is dull on percussion, the dullness being continuous with that of the heart on the left and of the liver on the right. At its right and left limits the tumor is somewhat tender on pressure. The feeling conveyed is that of tense, deep fluctuation. There is no mobility of the tumor, except that on deep inspiration it seems to move downward slightly with the diaphragm. Neither visible peristalsis nor muscular spasm is present. The rest of the abdominal examination is normal. There are no piles, and the genitalia and extremities are without note. The temperature is normal. Examination of urine, blood and feces failed to show anything of note. Inflation of stomach and colon did not alter in any way the dullness outlines of the tumor. The Wasserman reaction was negative.

On the 10th of November, 1909, operation revealed a large abscess of the left lobe of the liver, containing about a pint of necrotic, purplish-red material interspersed with flakes and particles of a distinctly purulent aspect. At a spot on the upper surface of this lobe the abscess wall was thin and united to the parietal peritoneum by recent adhesions. No evidence of further disease of the liver could be made out. Its right lobe was of normal size, its lower border coming just to the edge of the ribs. The rest of the abdominal organs were normal so far as could be determined. The cavity was drained by a large tube held in place by a couple of stitches.

Examination of the abscess material showed it to be sterile, with no evidence of echinococcus. After a rapid convalescence of three weeks the cavity had so filled in and shrunken together that the patient could leave the hospital with but a small granulating skin area.

One year later, though he still appears somewhat sallow, his only complaint is that he tires easily. He has been actively engaged at work and has regained the weight previously lost, but has not gone above it.

Here is presented a case of single abscess occurring in the left lobe of the liver of which the only primary symptom was very rapid loss of weight and strength. To this was added pain, when the thinning of the abscess wall caused the peritoneum to become involved. The discomfort following food, deep breathing and stooping over is explained in a purely mechanical way through the presence of this adhesion. Etiological factors such as residence in the tropics or suppurative focus elsewhere in the body were entirely absent. That the abscess had existed for a considerable period before the patient became aware of it is probable both on account of its size and the sterile nature of its contents, but that it could have been present for a year as a sequel of the infection of the hand seems hardly credible. Its pyogenic nature seems established beyond a doubt because of the freedom from any further symptoms during the past year. This would hardly have been the case had a necrotic gumma or a neoplasm been the underlying cause.

### THE DISAPPEARANCE OF A CATHETER IN THE BLADDER AND ITS SUBSEQUENT SPONTANEOUS PASSAGE.

BY W. B. WILSON, M.D., PAWTUCKET, R. I.,

*Attending Surgeon to St. Joseph's Hospital, Providence, R. I., and the Memorial Hospital, Pawtucket, R. I.*

DURING the second week of an attack of typhoid fever from which a young man twenty-eight years of age was suffering, he had difficulty in passing water, so much so that his physician was compelled to catheterise him and had to repeat the operation several times. The last time he catheterized him he emptied the basin before withdrawing the instrument, which was of a soft rubber type, No. 10 English. On returning to withdraw the catheter he was astounded to find that it had disappeared. He made several attempts to grasp it, but all were ineffectual. I was called with the

idea of immediate removal, but it struck me after I had satisfied myself that the catheter was wholly in the bladder, that, being probably sterile and the patient being pretty sick, not much harm would follow leaving it there and that the traumatism attendant upon removal might be the turning point in the critical stage of a dangerous disease. I, therefore, counselled washing out the bladder daily with sterile water. On the seventh day after the accident, after the physician had washed out the bladder, that organ being partially filled, the patient had a desire to strain and out came the catheter, eye-end first. There was no cystitis nor any other untoward result. The patient made a complete recovery from the typhoid.

As I never heard before of a catheter being passed spontaneously, I thought it might be worth reporting.

## Reports of Societies.

### SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

TWENTY-THIRD ANNUAL SESSION, HELD AT NASHVILLE, TENN., DEC. 13, 14 AND 15, 1910.

THE President, DR. W. O. ROBERTS, Louisville, Ky., in the chair.

#### THE IMPORTANCE OF PRESERVING THE GALL BLADDER.

DR. J. W. LONG, of Greensboro, N. C., stated that a critical analysis of 86 of his own operative cases had convinced him of the value of retaining the gall bladder. Cholecystectomy should be done in the presence of new growths, especially primary carcinoma; also in gangrene when the whole thickness of the bladder wall was involved, but not otherwise, since he had had several recoveries following drainage for gangrenous mucosa of the bladder. Infection and empyema were only relative indications for doing cholecystectomy, most cases doing well under cholecystotomy. The cystic duct obstruction always present in empyema was gradually overcome under the beneficent influence of drainage, and after a varying interval of one to seven days, in one instance fifteen days, bile began to discharge through the duct. Stone impacted in the cystic duct was only a rare indication for cholecystectomy, the writer never having failed to remove the stone. Even perforation could not be considered an absolute indication for cholecystectomy, the writer reporting two cases which did perfectly well under drainage. Drainage was second in importance only to removal of stones. Removal of stones could not cure a pancreatitis, but drainage did. No organ in the body once badly damaged responded so effectually to drainage as did the gall bladder. Drainage was the *sine qua non* for curing the patient of the widespread sequelæ of gall-bladder infection. It was prudent in doing a cholecystectomy to leave a forceps rather than a ligature on the cystic duct in order to provide for a free flow of bile should untoward symptoms arise. Embryologically, the bud for the gall bladder and that for the larger portion of the pancreas developed together; as they grew and receded from each other their ducts remained joined. The relation of the two organs was very close anatomically and physiologically. The gall bladder was not a storage pouch for bile, but rather was an expansion tank for the bile duct system. Its removal was always followed by dilatation of the ducts, even the nub of the cystic duct compensating for the loss of their expansion tank. Pure bile injected into Wirsung's duct caused pancreatitis; bile mixed with the bladder mucosa did not, — a cogent reason for preserving this function. The only avenue through which to treat chronic pancreatitis present or in the future was the bile duct system, preferably through the gall bladder.

#### DISCUSSION.

DR. THOMAS S. CULLEN, of Baltimore, stated they had for several years made it a practice to drain all gall bladders, except in those cases in which there was a suspicion of malignant disease, or where there was empyema of such a character that it was impossible to drain satisfactorily, where the danger of removing the gall bladder was not as great as that of infection from drainage.

DR. HOWARD A. KELLY, of Baltimore, stated under no circumstances would he remove a gall bladder that was apparently sound or even moderately diseased which evidently might easily recover with drainage. Again, he would not remove a gall bladder where there was any suspicion of trouble in the common duct or any pancreatic disease. It was best to remove a gangrenous gall bladder or one that was suspected to be malignant.

DR. J. GARLAND SHERRILL, of Louisville, said there had been a tendency to do too radical operations in this region. He had saved a number of gall bladders that were full of pus by drainage. The reparative power of the tissues was very great and the opening became patent in a short time, and drainage of bile free.

DR. RANDOLPH WINSLOW, of Baltimore, stated he had operated on a case some time ago where the duct was evidently obstructed; although bile reappeared, it did not flow. However, in the course of time nothing but mucus came from the external opening; the gall bladder was distended, and bile did not pass. There occurred stricture of the cystic duct which necessitated a second operation for the removal of the gall bladder.

DR. R. E. FORT, of Nashville, said in those cases where they had a small contracted, rigid, friable gall bladder, not larger than the finger, in which drainage could not be instituted, he thought it not only proper but essential to do a cholecystectomy. There were cases occasionally in which they had common duct obstruction and it became necessary to do cholecystectomy, but in other cases it was not necessary to do this radical operation.

DR. BACON SAUNDERS, of Fort Worth, Tex., stated in these old chronic gall bladders it was necessary to continue drainage sometimes for six weeks in order to get satisfactory results.

DR. WILLIAM B. COLEY, of New York City, said when he removed a gall bladder he instituted drainage in the cystic duct and this did as much good to the pancreas as if they drained through the gall bladder itself.

DR. LONG, in closing, stated in gall-bladder surgery, as in all other surgery, it was largely a matter of personal equation in deciding what was the best thing to do in the individual case.

#### CHRONIC URETHRITIS AND CHRONIC URETERITIS CAUSED BY TONSILLITIS.

DR. GUY L. HUNNER, of Baltimore, in a paper on this subject contended that certain cases of chronic urethritis and chronic ureteritis heretofore of obscure origin were due to tonsillitis. He recognized that the great majority of chronic urethritis cases were due to gonorrhea, most of the cases of rheumatic urethritis of the older textbooks being of this nature. Some cases could be traced to trauma and infection in childhood, or trauma and infection of non-gonorrheal character in the newly married. Other cases might probably be

due to onanism, and some might be classed as auto-infections, the short female urethra and the myriads of micro-organisms normally present in the outer orifices being factors that would make auto-infection probable.

After ruling out gonorrhea and these rarer causes of infection, there still remained a certain large percentage of chronic urethritis cases, which, in recent years, he had associated with the rheumatic diathesis. He asserted that in a large proportion of this class of cases the disease was due to infections or toxins from the tonsils, and the importance of this observation was appreciated only when we recognized that the urethritis could not be permanently cured until the tonsils were thoroughly extirpated. To substantiate his views, four cases who had had the tonsil operation were reviewed in detail, and several others not operated were cited briefly. Of the four operative cases, two had been treated for months without appreciable permanent benefit to the urethra, whereas after removal of the tonsils, Case 1 recovered. The recovery was prompt, and patient had been well for fourteen months, after having had bladder trouble eight years. Case 2, after removal of the tonsils, had an irritable spot in the base of the right fauces, which for seven months gave periods of sore throat accompanied by rheumatic symptoms in the knees and urethritis symptoms. For the past four months the throat symptoms had been absent, and the joints and urethra were apparently well. Case 3 had been treated in the hospital on two occasions in the past nine years, with prompt recovery from the urethral symptoms each time. On the last hospital visit, in March, 1910, the tonsils were clipped with the tonsillotome, and the patient reported a return of all her symptoms soon after going home. Case 4 had a tonsillectomy after two urethral treatments, so no conclusions could be drawn in her case as to the futility of urethral treatments, without removal of the tonsils. She had apparently recovered after having had bladder trouble three years, although only four months had elapsed since the tonsillectomy. The various possible causes of ureteral stricture were discussed and two cases were reported to illustrate the possible causal relationship of tonsillitis. The fact that acute prostatic abscess sometimes followed inflammation of the tonsils suggested a possible relationship between the tonsils and certain chronic urethritis cases in males. These cases were often associated with chronic prostatitis, in which gonorrhea could be excluded as the cause, and for which no definite etiology had heretofore been obtainable.

DISCUSSION.

Dr. J. M. Mason, of Birmingham, said it seemed that all of the cases reported had occurred in unmarried women in whom there was some possibility of nervous disturbance or reflex irritation of the urethra. He would like to ask Dr. Hunner whether he had had any cases in married women or in women whose sexual relations were normal.

Dr. G. R. Holden, of Jacksonville, Fla., asked whether the discharge in these cases contained pus cells as seen by the microscope.

Dr. Howard A. Kelly, of Baltimore, stated the wife of a professional colleague had been under his care for fifteen years. She had more or less malaise. Careful examination revealed pus in the urine in varying amounts, but so far as the local conditions were concerned the patient was without symptoms. She was in ill-health. He catheterised and found pus came from the left kidney. He dilated the ureter on that side, washed out the kidney, she got better, and after a few months returned for further investigation and treatment. She had for twelve years been troubled with rheumatism. She had enlargement of the joints. Last spring, on examining her, he found a large, tender kidney with a good deal of pus in the urine. He drained this kidney and did a plastic on the semilunar ureteral valves. He cut down on the fascia at the end of the ureter and drained from the side. She continued to suffer with rheumatism through the summer, although she experienced some relief from the drainage in the side. This fall he took out the kidney and her rheumatism disappeared like magic.

Dr. John F. Oechsner, of New Orleans, said it seemed from the cases cited, without going into any other possible local infection, that the tonsils were at fault. He feared, however, that what had been said might lead to more or less universal tonsillectomy if the members of this representative body should regard the tonsils as always at fault in cases of urethritis, where the specific organism, the gonococcus more particularly, could not be determined. He would, therefore, make a plea to educate the practitioner to be more specific in determining the nature of a local infection, whatever it may be, and find out exactly where the focus of infection was.

Dr. Hunner, in closing, stated some of the cases he had had since the four he had reported were married women. These cases did not have pus in the urine. He stated they could not milk pus out of the urethra as they could in an acute gonorrheal case.

THE BEST METHOD OF EXPOSING THE BLADDER FOR AGGRESSIVE OPERATIONS BY THE SUPRAPUBIC ROUTE.

Dr. Howard A. Kelly, of Baltimore, pointed out the disadvantages of the method in common use, namely, of making a vertical midline incision between the recti muscles, when the muscles with their underlying fascia resisted retraction and so offered only a slit through which the bladder could with difficulty be exposed. Dr. Kelly used a transverse crescentic incision above the pubis through skin, fascia out to and even beyond the semilunar line on each side. He then separated the fascia from the muscles after the manner proposed by Pfannenstiel for operations upon abdominal and pelvic tumors. In bladder cases, however, the abdominal cavity was not opened. The recti muscles freed from their overlying fascia were flaccid and easily drawn apart, thus affording a very broad exposure of Retzius' space. The bladder was clearly brought into view by inflation with air pumped in through the urethra and was widely incised in its transverse axis, thus affording a maximum exposure of the viscus. With the bladder thus conveniently opened, all parts of the organ were perfectly exposed to view and made easily accessible to operation. The whole question of dealing with extensive ulcers, papillomata, malignant disease and cystitis requiring resection was by this means greatly simplified. Further help in bringing the base of the bladder up within reach might be secured by introducing two fingers into the vagina in women and pushing the anterior wall upwards.

At the conclusion of the operation, the bladder was closed with fine silk or catgut sutures, the investing fascia was also carefully united with catgut or silk, and the rest of the abdominal wound closed, in suitable cases leaving a small drain extending down to or into the bladder. By this operation a maximum exposure and accessibility of the bladder without injury to the important underlying structures was gained without a risk of subsequent hernia.

DISCUSSION.

Dr. J. Shelton Horsley, Richmond, Va., stated for more than a year he had been using the Pfannenstiel

incision as a routine measure in all suprapubic cystotomies, and he found it took very little more time than the ordinary incision and it left the abdominal wall in a much better condition afterwards.

DR. ERNST JONAS, of St. Louis, Mo., said the Pfannenstiel incision gave a very good view of the bladder. This incision had been advocated by Dr. Pfannenstiel for clean gynecological cases where there was no pus in the pelvis, and for cases in which the pelvis was badly infected.

DR. REUBEN PETERSON, of Ann Arbor, Mich., stated the Pfannenstiel incision was only suitable for clean cases. He had had a large experience with the transverse incision for shortening the round ligaments and for operations on the bladder, and if the wound should suppurate, the objection raised by Dr. Jonas held good. While the technic demonstrated by Dr. Kelly was fine for clean cases, he could see objection to this incision in suppurative cases.

DR. GEORGE H. NOBLE, of Atlanta, Ga., stated he had made use of the transverse or Pfannenstiel incision quite frequently in cases in which he did not expect to encounter a septic process, both in placing the uterus in its normal position and in opening the bladder. A point he wanted to bring out especially was, that in this dissection you could increase the opening very materially and satisfactorily by making a section of the lower ends of the recti muscles, where necessary, and get a good view. This was particularly the case where they wanted to open the pelvis to go into the peritoneum, using this incision.

DR. ALEXANDER HUGH FERGUSON, of Chicago, stated he could see how this method of exposing the inside of the bladder would be of great utility to those surgeons who practiced suprapubic prostatectomy also in removing papillomata in avoiding the ureter. They must remember that there was no fascia behind the rectus muscle in this region, and that it retracted easily and acted as a bar to infection in the operative area.

### STONE IN THE URETER.

DR. R. C. BRYAN, of Richmond, Va., reported eight cases of stone in the ureter, and then discussed the etiology, pathology, symptoms and diagnosis, differential diagnosis and surgical treatment. As to treatment, he said: The size, number and location of the stones having been accurately determined, the treatment resolved itself into one of two methods: (1) Ureteral catheterization and lavage; (2) operation. It would seem advisable in small stones, and those located in the lower segment of the ureter, to attempt by ureteral catheterization and injection to dislodge them. This would likely occur in a fair percentage of instances. It occurred in four of his cases. If this method failed, operation was indicated. He had done only the extraperitoneal operation. It did not appear that the intraperitoneal or combined methods offered any peculiar advantage which would justify the possibility of peritoneal infection by urine leaking from a suppurating tract. An incision starting midway between the highest point of the crest of the ilium and the eleventh rib and running to the anterior superior spine of the ilium, thence parallel with and internal to Poupart's ligament for its outer three fourths, had in his series given sufficient opening to explore the ureter from the kidney above to the bladder below. In those instances in which the stone was incarcerated in the intravesical segment, the incision might be carried down to the spine of the pubes, thus giving all the room desired. The ureter was cut through its long axis, the stone removed. Catgut sutures approximated the wound, and a tube was inserted to the site. In his series there was leakage in but one case for five days, the remainder giving none at the end of two days.

### THE EARLY DIAGNOSIS AND TREATMENT OF RENAL TUBERCULOSIS.

DR. J. M. MASON, of Birmingham, reported a case in which there was extensive tuberculous disease of the left kidney, with symptoms referable only to the bladder. He said renal tuberculosis was, in the beginning, a unilateral infection and might remain so for a long time. For successful treatment the patient should reach the surgeon while the disease was still confined to one kidney. The early symptoms were rarely referred to the kidney, but in a large percentage of cases were vesical and might remain so for many months. For the diagnosis, repeated examinations should be made for the detection of tubercle bacilli in the urine, and often the inoculation of guinea pigs should be resorted to. The cystoscope and ureteral catheters must be made use of to ascertain the condition of the bladder and to determine which kidney was the seat of disease, also for the purpose of ascertaining the organic and functional condition of the second kidney. The treatment consisted of prompt nephrectomy followed by the best hygienic, climatic and dietetic management.

### CÆSAREAN SECTION WITH SPECIAL REFERENCE TO THE TIME OF OPERATION AND ITS TECHNIC.

DR. LEWIS S. MCMURTRY, of Louisville, Ky., said the operation should be performed with the same deliberate care and expedition as were observed in other abdominal operations. There seemed to be a general impression on the part of surgeons that exceptional rapidity bordering on haste should characterise the steps of the operation. There was no valid reason for this. Davis made the abdominal incision above the umbilicus, and the uterine incision just below the fundus of that organ. The speaker did not believe the site of the incision was of essential importance. The abdominal wall at the full term of pregnancy was thin and relaxed easily. As soon as the abdominal incision was made and the uterus exposed, long gauze pads wrung out of warm salt solution were placed within the abdomen to hold back the omentum and intestines and protect peritoneal surfaces while the uterus was being emptied and closed. With the demonstrated results of Cæsarean section as now obtained the scope of the operation must necessarily be widened and its application greatly extended. What was most needed at the present time was an active interest on the part of all abdominal surgeons, and such a campaign of education as was successfully applied some years since in behalf of early operation in other conditions requiring prompt surgical intervention. It was established that the primary Cæsarean operation in skilled hands had a mortality quite as low as uncomplicated ovariotomy and clean hystero-myomectomy. With repeated examinations cervical dilatation and application of forceps carried out with crude and desultory observance of aseptic precautions, the mortality of abdominal hysterectomy was necessarily increased. The co-operation of the surgeon and the general practitioner was necessary to correct this fatal error.

### DISCUSSION.

DR. E. GUSTAV ZINKE, of Cincinnati, stated that if the mortality of Cæsarean section to-day was too high it was because of carelessness or indifference on the part of those who took obstetric cases and did not give them the attention they deserved. When a woman engaged their services with a view to attending her in

her approaching confinement they should study the case carefully. It was here where a mistake was made. Because a woman had a good shape, was otherwise in good health, and there was no indication of any difficulty, she was permitted to go until the time of labor had arrived, and the obstetrician in very many instances had not the remotest idea of the capacity of her pelvis or of the attitude of the fetus within the uterine cavity, and it was because of lack of this knowledge that the woman went into labor, and then labor was protracted from some cause or other, the difficulty of which was detected by the consultant, who saw the necessity of performing hebosteotomy, Cæsarean section, version or craniotomy, as the case might be. His sole object in speaking on this paper was to caution the profession anew, and he would do it on every possible occasion, that every case of pregnancy should be thoroughly studied before the woman went into labor. The physician should know all about her pelvis, about the attitude of the fetus, as well as the condition of her kidneys, heart, liver, etc.

Dr. Ernest S. Lewis, of New Orleans, said he thought the obstetrician should thoroughly examine every woman whom he expected to confine, not only to determine the presentation of the fetus, but to correct any malpresentation, if it was possible; also to determine the condition of the pelvis by proper mensuration. Statistics showed that Cæsarean section, the primary operation, was not attended with any more gravity than the removal of an ovarian tumor. He fully agreed with the author of the paper in regard to that, and that the danger was proportionate to the length of time the woman had been in labor, whether examined or not. There was greater danger of infection if frequent examinations had been made or if instruments had been used.

Dr. Reuben Peterson stated if there was one subject in the whole range of medicine that had been neglected in the last twenty years it was obstetrics. This could be explained in a way by the greater pecuniary rewards which had accrued to abdominal and other kinds of surgery, so that it had made the obstetric feature more or less anomalous in this country. Many men graduated from the medical schools without an accurate idea of what to do for a woman during pregnancy, or how to size up a difficult case before labor. The specialist was usually called in after the practitioner had failed to deliver the woman by the natural way. The time was coming when the operation of high forceps would not be taught in the medical schools as an obstetric procedure. High forceps were put on when the head had not entered the pelvic inlet. There was some disproportion between the head and the superior strait, and in his opinion Cæsarean section gave far better results to the woman and to the child than did the operation of high forceps.

Dr. McMurtry, in closing, stated the attitude of the profession towards Cæsarean section was a very serious one, and it should be corrected. It was the highest function of an association like this, whose expressions went out to the profession and were looked upon as authoritative, to correct erroneous impressions, and the erroneous impression he alluded to was the general attitude of the great body of medical practitioners, namely, that Cæsarean section should not be done until the patient had been examined by two or three men; that these examinations were made with the most perfect observance of asepsis, and all ordinary means of delivery had been tried on the patient for hours. The important point they wanted to impress was to get the great body of the profession to recognise early, if not before labor, early after labor had begun, that it was a case suitable for Cæsarean section.

### INTUSSUSCEPTION.

Dr. Stephen H. Watts, of Charlottesville, Va., reported two cases of intussusception in the adult, one of which was due to multiple adenomata of the intestine, and the other to a sarcoma of the cecum. In the first case it was found necessary at several operations to perform two resections of the intestine with lateral anastomosis, and seven enterotomies for removal of the growths. The patient was perfectly well when seen about a year after the last operation. In the second case, after reducing the intussusception, the sarcoma was removed with an elliptical portion of the wall of the cecum, and the patient made a good recovery. After reporting these cases, Dr. Watts discussed in some detail the symptoms, diagnosis and treatment of adenomata and sarcomata of the intestine.

### COMPLICATIONS DUE TO OPERATIVE PROCEDURES.

Dr. L. E. Burch, of Nashville, Tenn., mentioned the accidents following operative procedures in his own work, and referred to accidents occurring in the work of other surgeons. He laid stress on the following points: "(1) Many of the accidents following operations were preventable, while others were not. (2) No operation should be advised, however trivial in character, unless there is positive pathology to indicate its performance. (3) No operation should be carried out, either under local or general anesthesia, until a careful history of the case was obtained, including a thorough physical examination, with urinary and blood findings. (4) Better results would be obtained and fewer accidents would happen if patients were given preliminary treatment before operation. (5) Surgeons should never state to patients that any operation was free from danger."

### FORMATION OF A NEW VAGINA.

Dr. Alexander Hugh Ferguson, of Chicago, reported three cases. In the procedure presented the author did not claim to produce a normal vagina, still in two of the three cases reported a vagina had been formed which yielded satisfaction. The third case was not yet married, but there was no doubt but that the vagina would prove as efficient as the other two. The technic of the operation varied slightly in each case, but the underlying principles were the same, namely, first to utilise the available mucous membrane; second, to form three flaps; third, to tunnel through the peritoneum behind the bladder and in front of the rectum, dissecting the peritoneum from both structures without opening the peritoneal cavity; fourth, to invert the flaps into the tunnel thus formed and suture them in place with catgut. The lateral flaps included the mucosa of the labia minora on either side, exercising care not to interfere with the mucous membrane in connection with the clitoris and meatus urinarius. The central flap was cut as thick as possible in order not to interfere with nutrition. The lateral flaps were cut with the same precaution in mind. The fact that the flaps were not sutured together rendered the cavity dilatable to an ideal extent. Horse hair was used to close over the denuded areas. A roll of gauze about seven inches long was anointed with sterile vaseline and zinc oxide and inserted into the plastic vaginal canal. The external end spread like a flange and was held in place by a firm pad. It must not fit too tightly. As to the after-treatment, the initial dressing must not be withdrawn for six or eight days. The parts must be kept as aseptic as possible. The internal stitches were catgut and might be left to become absorbed. The horse hair should be left in place for two weeks. Abso-

lute cleanliness without antiseptics was of primary importance. The patient must remain under observation for at least three months.

### A POSITION FOR SAVING TIME IN COMBINED ABDOMINAL AND PELVIC OPERATIONS.

DR. A. C. SCOTT, of Temple, Tex., described this position as follows: By use of any metal knee-holder which fits comfortably in the popliteal space, one might secure a combined exposure of the abdomen in an elevated position, and at the same time exposure of the pelvic outlet, permitting the use of self-retaining specula, if desired. This was accomplished by having the popliteal knee-holder hinged on a short upright bar which was broadened and slotted at the lower end to slide, with a set screw upon a horizontal metal bar, which in turn was fixed to a strong cylindrical upright bar, sliding in a vise-like clasp at the side of the operating table. The sliding upon the horizontal bar allows adjustment for the varying lengths of patient's thighs. The cylindrical sliding upright bar at the side of the table permits the thighs to be moderately flexed or fully extended, abducted or adducted at will. Before starting the anesthetic, the patient's hips are brought beyond the edge of the table and the limbs placed upon the knee-holder. A piece of bandage loosely wound about each foot and ankle was tied to a convenient point below the corner of the movable part of the table to prevent extension of the leg; another was placed above each knee to prevent elevation of the knees, thus securely holding them in their respective knee-holders. Any modern operating table will serve the purpose for these attachments and enable one to secure the desired combined position if it had a pivotal point about the center permitting the entire surface of the table to be raised and lowered at will. He used a modification of the Markoe table which operated with wheel and ratchet and could be changed by the anesthetist with perfect ease. After the patient was in position and the anesthetic was begun, the foot of the table was lowered some five or six inches for convenience of completing the preparation by thorough rinsing of the abdomen and vagina. This was done and the table returned to the horizontal plane without again having to take hold of the patient with the hands.

The advantages of this position were: (1) Where two operators were working together with plenty of assistants at their command, the time required for many complicated operations might be reduced to a marked degree and often as much as 50%. (2) By changing the axis of the table, the pelvis and the abdomen might be lowered, if desired, or elevated to secure the advantages obtained by the Trendelenburg position at any stage of an abdominal operation without interfering with work simultaneously being done upon or through the pelvic outlet. (3) All the advantages of the Trendelenburg position might be obtained without its disadvantages. (4) All the advantages of the dorsal position for pelvic outlet work were obtained without flexing the thighs upon the abdomen or otherwise interfering with work required through the abdominal wall. (5) The final preparation of rinsing both the abdomen and vagina was easily accomplished while the anesthetic was being given without having to lift or disturb the patient again. (6) By wide abduction of the extended thighs during abdominal operations room was made for a second assistant to stand with advantage for sponging, ligating and retracting equal to the one standing directly across the table from the operator.

### THE TREATMENT OF ANTEFLEXION.

DR. HENRY T. BYFORD, of Chicago, stated he did not offer a new treatment. He asserted that the newest methods were not satisfactory and selected for consideration one of the old methods and gave the essentials and technic that had given success in his practice. The method consisted in keeping the cervix overdilated for six months to a year, and in the prevention, during the second year, of contraction sufficient to cause symptoms. The advantage of this method over all others consisted in keeping the uterus under the influence of the treatment until the cervix developed to a size that would not interfere with uterine drainage and cause symptoms, when the case could be compared to those of symptomless rigid anteflexion that we sometimes observed in multiparæ. He claimed that the cutting operations favored atrophy of the cervix and were irrational in most cases because the cervix was already deficient in development.

### COMPLETE TRANSVERSE DESTRUCTION OF THE SPINAL CORD.

DR. RANDOLPH WINSLOW, of Baltimore, read a paper in which he reported a case of complete transverse destruction of the spinal cord from pistol wound without penetration of the spinal canal; with a consideration of concussion as an etiological factor in the production of this lesion, and of the question of suturing the cord when it was completely divided. He narrated two cases of pistol wound of the dorsal vertebræ in which the cord was not injured by direct impact of the bullet, but in both of which paralysis and the usual signs of a transverse destruction of the cord immediately supervened, proving fatal in one case, which came to autopsy and the bullet was found lodged in the second dorsal vertebra, but not penetrating into the spinal canal or impinging on the cord. The other case presented similar symptoms and was submitted to laminectomy, but the cord was not divided nor could the missile be found. He was still living, but was in a very precarious condition, with absolute paralysis below the eighth dorsal vertebra. These cases were thought to have been due to concussion of the cord. The views of a number of military surgeons and authors were quoted in regard to the production of the lesions of the cord by concussion without direct impact on the spinal cord, who were unanimous in the belief that such injuries did occur. The question of suturing the severed spinal cord was discussed, and several operations of this character in the hands of other surgeons were mentioned. The results had not been good, and physiologists declared that regeneration of the severed spinal cord was impossible. Be this as it may, marked improvement followed in one case, and there was no reason why the cord should not be sutured in appropriate cases. Dr. Winslow summed up his views upon these questions as follows: (1) That serious and even fatal lesions of the spinal cord might be produced by concussion, without direct impact. (2) That in gunshot injuries with a probability of a complete severance of the cord, laminectomy should be performed, foreign bodies and clots removed, bleeding arrested, and if the cord had been divided, the separated ends should be approximated with sutures. (3) Care should be exercised not to destroy any nerve fibers or tracts which might still be intact.

### AN UNUSUALLY LARGE OVARIAN CYST.

DR. J. SHELTON HORSLEY, of Richmond, Va., reported a case (and showed photographs) of a large ovarian cyst which weighed 116½ lb. The greatest abdominal circumference was 63 inches. It was successfully removed. He referred to the fact that operation in these cases of large ovarian cysts usually had a

high mortality rate on account of the pressure which caused organic changes and made the patients poor surgical risks.

DISCUSSION.

Dr. Thomas S. Cullen, of Baltimore, Md., stated four and a half years ago he saw a patient who weighed 174 lb. She was supposed to have had an ovarian cyst, but it turned out to be a fibroid tumor. They operated, removed an 89-lb. fibroid, and the patient immediately after operation weighed 85 lb. After a week in the hospital, when edema began, she weighed 80½ lb., and although she developed bed sores, she promptly recovered. In that case after operation the ribs stuck out six inches and the recti muscles which lay high up on either side gradually came together until at the present time they were only 2 cm. apart.

Dr. Alexander Hugh Ferguson stated he was called to a small town near Indianapolis to see a woman with a large ovarian cyst. She had carcinoma of the left breast and gallstones. She was in a bad condition. He introduced a small trocar and canula which went into a cyst that was quite watery. The trocar was left in place for twenty-four hours. The next day she was able to eat, a thing she had not been able to do for two weeks, and was able to swallow. Her heart, which was bad, improved. He passed a large trocar in another direction through the same opening, and allowed it to remain for another twenty-four hours, and then she was brought to Chicago, and three days later he operated and at one sitting removed the cyst, the left breast and 1,250 gallstones from the gall bladder, and she recovered.

*(To be continued.)*

## Book Reviews.

*The Principles of Gynecology.* By W. Blair Bell, B.S., M.D. Lond., Assistant Gynecological Surgeon, Royal Infirmary, Liverpool. With 6 colored plates and 357 illustrations in the text. London, New York, Bombay and Calcutta: Longmans, Green & Co. 1910.

This is a clearly printed, well-bound and satisfactorily illustrated book of 551 pages representing the author's experience in the Royal Infirmary in Liverpool. All references to the literature and, therefore, proper names have been omitted because of the author's belief that they are not needed in a textbook for students and the general practitioner. An attempt has been made to adopt a simpler and more logical arrangement than is found in the time-worn treatises on gynecology. The book opens with excellent chapters on the development and the anatomy and physiology of the genital organs. The photomicrographs are especially good here, and the many examples found elsewhere are a strong feature of the book. The chapter on case taking and the examination leaves something to be desired in that the positions of the patient and the physician in the examination are figured faultily in the case of both the dorsal and the Sims position. The titles of the succeeding chapters show the author's somewhat unusual classification: "Congenital derangement of the normal anatomical conditions — malformations; Acquired derangements of the normal anatomical conditions — injuries; Acquired derangements of the normal anatomical conditions — displacements; Disorders of the normal physiological conditions in relation to menstruation; Disorders of the normal physiological conditions in relation to conception; Infective and parasitic diseases of the genital tract; Retention and effusion cysts of the genital tract; Innocent neoplasms of the genital tract; Malignant neoplasms of the genital tract; The preparations for operation and the subsequent management of the case; The main principles of gynecological operations, with some details of their technic." One appendix considers electrotherapeutics in gynecology and another, the classification of the causes of certain symptoms. An excellent index with the chief references in dark type closes the book.

Chapter VII, treating of displacements and the use of pessaries, is not satisfactory from the standpoint of the American gynecologist, particularly as to the handling of pessaries, although the advice as to the choice of operative procedures for the correction of displacements is sound. As much cannot be said of the plastic operations recommended and figured in the later chapters. For instance, Pozzi's operation for congenital stenosis of the cervix and the form of amputation of the cervix, figured on pages 496–498, have been too little proven to justify recommending them to students, and the borrowed figures of plastic operations on the pelvic floor and the figures of the operation for vesico-vaginal fistula are too diagrammatical to show properly the steps taken. Any conservative operator would question the advisability of sewing the bladder to the abdominal wound in performing hysteropexy as shown in Figure 312, on page 462. There are several good colored plates and the illustrations, as a whole, are well executed. The book is to be commended as an able exposition to the student of gynecology from a new point of view.

*Diagnosis and Treatment of Diseases of Women.* By Harry Sturgeon Crossen, M.D., Professor of Clinical Gynecology, Washington University; Gynecologist to Washington University Hospital and Director of the Gynecological Clinic; Gynecologist to St. Louis Mullanphy Hospital, etc. Second edition, revised and enlarged. With 744 engravings. St. Louis: C. V. Mosby Company. 1910.

This second edition, as far as page 685, with the exception of an added list of illustrations and a regrouping of the figures in the first forty pages, is identically the same page for page as the first edition, a review of which was published in this Journal, Jan. 9, 1908.

The book now has 1,025 pages instead of 799, and 744 illustrations as against 700, but, on account of the thinner glazed paper upon which it is printed, the volume is no larger than the first.

Following page 685, where are to be found some additions to the treatment of malignant diseases of the uterus, there are abundant evidences of a thorough revision and amplification. The chapter

on pelvic inflammation has much new matter and new illustrations. Some of the latter are especially good, notably Figure 631, showing the connective tissue of the pelvis, and Figures 634 to 640, illustrating the opening and draining of a pelvic abscess. This chapter and the section on extra-uterine pregnancy in the following chapter are most satisfactory expositions of these subjects. The chapters on tumors of the ovary and parovarium and on malformations have been rewritten and illustrated anew, and the same may be said of the chapter on disturbances of function. The use of stem pessaries has been introduced into the treatment of dysmenorrhea in the virgin, and intermenstrual pain, precocious and vicarious menstruation receive more adequate treatment. The author has introduced into the chapter on the invasion of the abdominal cavity some new figures to explain his method of caring for gauze strip sponges during abdominal operations, and has inserted into the same chapter eight pages of tables of reported cases of foreign bodies lost in the abdominal cavity. The chapter on medico-legal points in gynecology has been enlarged. The index now consists of thirty-three double column pages compared with less than seven four-column pages in the first edition, and is much more useful.

As was said in the review of the first edition, the book abounds in useful practical points in technic. This edition is better than the first. It would be still further improved if a lot of the illustrations which show very little were omitted and others, which are crowded together and thus separate the text, such as those on pages 202 to 209, 212 to 218 and 245 to 251, all of these pages containing no text at all, were distributed.

*A Treatise on Orthopedic Surgery.* By ROYAL WHITMAN, M.D. Fourth edition. Lea & Febiger. 1910.

This excellent work has rapidly reached a fourth edition, demonstrating both the value of the treatise and a general interest in the subject. The third edition was so complete that the author has not found it necessary to make many changes in the latest publication. The book is of standard quality, both in text and appearance.

*Sanitary Statistics of the Italian Navy for the Years 1905–1906.* Rome: Ludovico Cecchini. 1910.

This belated biennial report of the Italian naval health inspector to the Minister of the Marine presents interesting tabulation of the incidence and duration of diseases among sailors in the Royal Italian Navy during the period noted. It is instructive to observe that in each year the minimal incidence of both syphilis and gonorrhea occurred in December. As the inspector remarks in his comment: "The cold of this month is not propitious for vagabond affections."

*Pellagra.* By DR. A. MARIE. With Introductory Notes by PROFESSOR LOMBROSO. Authorized translation from the French by C. H. LAVINDER, M.D., and J. W. BABCOCK, M.D. With additions, illustrations, bibliography and appendices. Columbia, S. C.: The State Company. 1910.

Dr. Marie's monograph on pellagra, of which the present volume is a translation and adaptation, is itself an abridgment of Lombroso's extensive treatise on the same subject. The latter was by general consent the leading authority in the world on pellagra, to which he had devoted much time in study and great skill in scientific research; and in selecting for presentation to the American profession the French version of his work, the translators have acted with great good judgment. Their work of translation and revision has been well done and affords an admirable example of comparative literary study in medical science, a kind of work which is nowadays unfortunately rare. There is an excellent prefatory note by Lombroso, written for this translation shortly before his death. There has hitherto been no good treatise in English on pellagra. This book supplies that defect and should constitute a valuable contribution to the materials and data now being accumulated for the study and ultimate eradication of the disease in this country.

*Diseases of the Eye, a Handbook of Ophthalmic Practice.* By G. E. DE SCHWEINITZ, M.D., Professor of Ophthalmology, University of Pennsylvania. With 351 illustrations and seven chromolithographic plates. Sixth revised edition. Philadelphia: W. B. Saunders Company. 1910.

Certain portions of the book have been largely rewritten; for example, parts of the chapters on Cataract, Diseases of the Retina, and Glaucoma; Iritis and its Manifestations; the Pathogenesis of Sympathetic Ophthalmia; Intra-ocular Optic Nerve Inflammation (Optic Neuritis) and Edema (Choked Disc, Papilledema); Nystagmus; Pulsating Exophthalmos; the Operations for Ptosis and Orbital Operations, which will no doubt enable this edition of the work to maintain its well-known position as a textbook on ophthalmology.

*Modern Materia Medica and Therapeutics.* By A. A. STEVENS, A.M., M.D. Fifth edition. Philadelphia and London: W. B. Saunders Company. 1910.

As the title indicates, this is a work on materia medica and therapeutics and not on pharmacology. The amount and quality of the latter given under "Physiologic Action" is not always up to the present standard. The book is divided into two parts, the first considering the drugs with their properties and uses, while the second portion deals with diseases and their treatment. The latter section is somewhat more valuable than the first, yet it is not wholly up to date, and especially the chapters dealing with gastro-intestinal diseases. However, both students and practitioners may derive from it some convenient information.

*Extra Pharmacopea.* By W. H. MARTINDALE, Ph.D., F.C.S., and W. W. WESTCOTT, M.B., D.P.H. Fourteenth edition. London: H. K. Lewis. 1910.

We hold the same favorable view towards this small volume as towards a previous edition of the same. It contains an immense amount of very valuable pharmaceutic and therapeutic information. This edition is enriched by new chapters on lactic acid bacilli, organic arsenic compounds, ionphoresis, radium, etc.; in the back of the book, as in the previous edition, there is a valuable chapter on clinico-chemical tests in urine, stomach contents, etc.

*Nephrocoloptosis.* A Description of the Nephrocolic Ligament and its Action in the Causation of Nephroptosis, with the Technic of the Operation of Nephrocolopexy, in which the Nephrocolic Ligament is Utilized to Immobilize both Kidney and Bowel. By H. W. LONGYEAR, M.D., Professor of Gynecology and Abdominal Surgery, Detroit Post-Graduate Medical School; Clinical Professor of Gynecology, Detroit College of Medicine; Gynecologist to Harper Hospital; Consulting Obstetrician to the Woman's Hospital; Ex-President of the American Association of Obstetricians and Gynecologists. With 88 special illustrations and a colored frontispiece. St. Louis: C. V. Mosby Company. 1910.

In this suggestive little book Longyear takes up broadly one of the features of the now popular topic of abdominal ptosis, and writes himself down as a pioneer investigator. Doubtless he is so. The book is suggestive if not always convincing. The main feature of the book is a dealing with the description of a ligament little regarded by, or unknown to, the average surgeon, a structure which some may think hypothetical, — the nephrocolic ligament, which the author describes as a definite band of tissue connecting the kidney capsule with the colon. This statement alone suggests the nature of the argument and the character of the book. A ligament closely connecting these two organs makes inevitable the conclusions drawn by the author, namely, that a descent of the caput coli and the ascending colon must bring down with them the right kidney. Granted these premises, one sees how an extremely perplexing and difficult problem in surgery may be solved. Since a descent of the colon, which we now know to be common, involves a descent of the kidney, we turn at once to certain inevitable measures of treatment. We conclude that the mere fixation of the kidney, as has been done for so many years, must be mainly futile unless the colon also be elevated and held in place. To accomplish this, Longyear advocates various measures, mainly the application of certain ingenious confining apparatus, or harness, supplemented, when necessary, by his method of fixing the kidney through operation. We commend the book to the reading of surgeons concerned in this problem.

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# Medical and Surgical Journal.

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## THE ECONOMIC ARGUMENT IN PREVENTIVE MEDICINE.

IN various campaigns of popular education on topics of public health and preventive medicine we have lately become familiarized with the so-called economic argument, which is in substance that every case of sickness or death represents a pecuniary loss to the community and that, therefore, the prevention of sickness and death represents a pecuniary gain, or at least saving. It is probably true that in the long run it costs less to prevent disease than it does to cure it; so far the argument is sound. But there seems a possible element of fallacy in the inference that a life saved is necessarily a financial asset to the state.

There have been numerous recent instances of the use of this form of argument. For instance, in his address on "Good Vision as an Economic Asset," to which we refer in another column of this issue, Dr. Lewis makes the assertion that the 2,000 cases of preventable blindness among the 6,000 blind persons in New York state represent a loss in capital of $28,000,000. This statement is based on the assumption that the individual human life has a measurable economic value, representing its average earning capacity. For this value various figures are set, depending on the nature of the statistician and the community from which the statistics are computed. Dr. Lewis estimates it at $14,000. A bulletin recently issued by the California State Board of Health sets the commercial value of the average male of thirty years at $16,000. The loss of every such life is supposed to represent a loss of that amount to the community.

There is undoubtedly an element of truth in this argument, but there is also an element of error. Human life is not altogether measurable,

even economically, in dollars and cents. Many lives are worth much more to the community than their earning capacity, many are worth much less. Moreover, even the economic value of human life is purely potential. If a man dies, whose supposed commercial value is $16,000, his death does not take that amount in cash out of the public treasury, nor would his continued existence necessarily mean more than his ability to take care of himself on the income of his intangible capital. Ethically, human life is of immeasurable value; but economically it is often as cheap as the individual life is everywhere in nature. President Eliot said in his Ether Address two years ago: "A baby is at its best only a hope." As a hope its value is infinite; as a financial asset it is probably not worth even the $2,500 at which a Massachusetts educator has recently appraised it. So in Dr. Lewis's 2,000 cases of preventable blindness, the economic loss which they involve to the state should be reckoned in terms rather of the actual public cost of their maintenance than of their hypothetical value as invested capital.

Our reflections on this subject should not be construed as aiming to abate an iota of public or professional zeal in the relief of human suffering by prevention. They are intended merely to point out a possible fallacy in the economic argument of which so much has lately been made. The campaigns of preventive medicine should be and are waged on much more altruistic grounds, and the use of such an argument will hardly be of great value even with those to whom it is intended to appeal, especially if not standing the test of an ultimate analysis.

## THE CASE OF THE MIDWIFE.

THERE is now before the Massachusetts Legislature a proposed act providing such amendments in the existing law relative to the reporting of births in this state as shall make the record of data more complete and their return more prompt. The intent and general purport of this act are excellent, but one of its details seems undesirable. In section 3, which provides the penalty for failure to report births within a specified time, there is used throughout the phrase "physician or midwife." Though this is not perhaps in itself important, it does, however, in effect, place physicians and midwives on a plane of equality to which the latter ought not to be admitted.

In another column of this issue we publish an extensive "Review of the Midwife Situation," by Drs. Emmons and Huntington, both of whom have had excellent recent opportunity to study this problem at home and abroad. The experience of foreign countries seems to indicate that the midwife, even when licensed and controlled, is always a source of possible danger to the community. The same is true in the United States. A recent investigation in Ohio, for instance, showed that over 50% of the midwives practicing there use no prophylactic measure against ophthalmia neonatorum. The essential inconsistency of simultaneous practice in a community by obstetricians and by midwives is that it involves a divided responsibility and a double standard of efficiency. The midwife may be defined as a person attempting to practice obstetrics without complete or even adequate medical education. The tolerance of such persons is an anomaly in an enlightened civilization. The midwife is a relic of medievalism, unhappily extant in the countries of the old world, but whose persistence in our own community should not be encouraged by any form of recognition.

## DETERMINATION AND NUMERICAL RELATIONS OF SEX.

THE factors governing determination of sex have long been a subject of rather inconclusive speculation. An editorial in the issue of the *British Medical Journal* for Feb. 4 comments interestingly on a recent article in *Nature* by Dr. R. J. Ewart on the numerical relation of the sexes. It is well known that male births exceed female, and at present this excess in Great Britain is in the ratio of 1,033 to 1,000. This ratio is maintained with a fair degree of constancy in all civilized countries, except under collateral conditions of war and famine, when the male birth-rate rises. The greater mortality of males, however, leads to an aggregate excess of females. From examination of vital statistics, Dr. Ewart believes he has discovered that women under twenty-five tend to produce female children; women over twenty-five, males. As a result, when there is an excess of females, more women will not marry till after twenty-five and an increase of males will result. Then more women will marry early, and the excess of females will be restored. There will thus be a series of slow oscillations on either side of an even balance between the sexes.

Dr. Ewart considers that the world's population is now at the zenith of a female fluctuation. Unfortunately no reliable statistics are available

over a long enough period to prove this point. Whatever the truth of his surmises, his conclusions seem to have little bearing on the moot question of sex determination, in which, from a purely objective point of view, temperament seems to play a larger part than any determinable physical factor.

## THE DEATH-RATE OF LONDON.

The vital statistics of London, as the largest civilized community in the world, are of particular interest and importance in showing what modern sanitary and preventive medicine can do to mitigate the hygiene evils of city life. The annual report of the Medical Officer of Health for the London County Council for 1909 shows the death-rate in that year to have been 14 per 1,000 living at all ages. Only two large cities in the world had a lower total mortality figure that year, Amsterdam and Brussels; and only two had a lower infant mortality, Amsterdam and Stockholm. In London only four diseases showed an increased death-rate over the preceding year, measles, influenza, pneumonia and cancer. The cancer death-rate has increased steadily since 1851. The total mortality percentage for 1910 has not yet been published, but during the last four months of the year it was respectively, 11.9, 12.6, 17.4 and 15.8 per 1,000, corresponding to an average of 14.4 for those months. It is interesting to note that the rates vary widely in the different districts and boroughs, the highest being 23.0 in Finsbury and 20.6 in Shoreditch, in the heart of the city; the lowest, 11.7 in Fulham and 11.9, Greenwich, at its periphery. Such figures indicate that the mortality in a large city is a composite of many factors and does not necessarily represent universal good health in a homogeneous population.

## OPTOMETRY.

Our recent editorial respecting the claims of opticians to recognition as "optometrists" is called to our attention by the receipt of a *Bulletin* of the American Medical Association devoted entirely to this subject. This bulletin is a continuation and extension of articles on the same subject by Dr. John C. Bossidy published in this Journal, Jan. 16 and Feb. 13, 1908. It shows beyond doubt that these men preach medicine in their meetings, teach it in their schools, that their legislative agitation centers around the legal recognition of that word "optometry."

The most striking part of the article is that which reproduces medical questions asked by their boards of examiners in optometry in states which have legislated in their favor. The *Bulletin* shows also that Vermont and Maine have arranged to examine candidates in anatomy, physiology and pathology of the eye, while Rhode Island's medical questions are given *in extenso*.

The hearing on this bill will be before the Committee on Public Health on March 9. Medical men are urged to attend, and thereby show their interest in protecting the profession and the people.

## MEDICAL NOTES.

Two Centenarians. — William J. Frazier, who died on Feb. 12 at Aurora, Ill., was locally reputed to have been born in 1810.

Henry Parminter, who died on Feb. 15 at Charlotte, N. C., is said to have been born on March 2, 1803. His wife died in 1909, at the alleged age of one hundred and one. He is survived by several great-great-grandchildren.

Accidental Death of a Centenarian. — It is reported from Florence, Colo., that on Feb. 15 Mrs. Francis Esper, of that town, alleged to be one hundred and eight years of age, died of burns received from the accidental ignition of her clothing by an open fire. She is survived by her husband, reputed to be three years her senior. They are said to have been married ninety-one years ago. It seems unfortunate that so distressing an accident should have prematurely terminated such a period of marital felicity.

A Devonshire Superstition. — Devonshire, in England, seems to be a particularly favorable spot for the survival of interesting popular medical superstitions. One of these, narrated in the Bristol *Times*, is that if a live spider be imprisoned in a nutshell and hung around the neck of a child with whooping-cough, the disease will disappear when the spider dies. Judging from the apparent persistent vitality of starveling spiders in attics and cellars, it should seem that their endurance under these circumstances would about equal the naturally self-limited course of pertussis.

Physicians' Fees and Penalties. — Physicians nowadays who are prone to complain that fees are small and that many patients fail to pay their bills should remember that, though some recorded fees in older times were large, the status of the recipient was hardly as enviable

as that of the modern doctor.. Dr. Walsh, of New York, has recently commented on a provision of King Hammurabi, of Babylon, B.C. 2250, that "if a physician operated on a man and save the man's life, he shall receive ten shekels of silver; but if he cause the man's death, they shall cut off his fingers." Perhaps, however, the modern malpractise suit, which has taken the place of the latter penalty, is even more to be dreaded than personal mutilation.

CORINNA BORDEN KEEN RESEARCH FELLOWSHIP OF JEFFERSON MEDICAL COLLEGE. — The accumulated income of this fund now amounts to $1,000. The fellowship will be awarded by the trustees, upon recommendation of the faculty, to a graduate of the Jefferson Medical College of not less than one nor more than ten years' standing, upon condition that he shall spend at least one year in Europe, America or elsewhere, wherever he can obtain the best facilities for research in the line of work he shall select, after consultation with the faculty; and that he shall publish at least one paper embodying the results of his work as the "Corinna Borden Keen Research Fellow of the Jefferson Medical College." Aspirants may address Dr. J. W. Holland, Dean.

THERAPEUTIC "BAKING" IN ENGLAND. — In the issue of the *Lancet* for Dec. 10, 1910, page 1705, a review of Vol. VII of Bryant and Buck's "American Practice of Surgery," commenting favorably on the chapter by Drs. Porter and Quinby, of Boston, on "Surgical Diseases of the Extremities," concludes as follows: "On one point we should like an explanation. For hematoma of the quadriceps femoris the following treatment is given: 'The patient should be kept at rest in bed for the first few days, and baking and moderate bandaging should be employed.' We do not understand what is meant by 'baking.'"

Evidently the application of dry heat to joints and limbs by means of specially constructed portable ovens within which the part may be placed is known in England by some other term than "baking," for it is inconceivable that so well-established a therapeutic procedure should be unfamiliar to physicians in that country.

## BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Feb. 21, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 40, scarlatina 36, typhoid fever 3, measles 101, smallpox 0, tuberculosis 69.

The death-rate of the reported deaths for the week ending Feb. 21, 1911, was 20.13.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, Feb. 18, 1911, was 265, against 262 the corresponding week of last year, showing an increase of 3 deaths, and making the death-rate for the week, 20.06. Of this number 118 were males and 147 were females; 258 were white and 7 colored; 151 were born in the United States, 109 in foreign countries and 5 unknown; 58 were of American parentage, 173 of foreign parentage and 34 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 47 cases and 2 deaths; scarlatina, 43 cases and 0 deaths; typhoid fever, 4 cases and 0 deaths; measles, 96 cases and 2 deaths; tuberculosis, 55 cases and 33 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 65, whooping cough 5, heart disease 40, bronchitis 5. There were 14 deaths from violent causes. The number of children who died under one year was 46; the number under five years, 64. The number of persons who died over sixty years of age was 89. The deaths in public institutions were 105.

APPOINTMENT OF DR. CARSON. — It was announced last week that Dr. Paul Carson, who since 1894 has been port physician in charge of the quarantine station in Boston harbor, has been appointed as chief of the newly established division of child hygiene and school medical inspection of the Boston Board of Health. It is stated that the number of school medical inspectors is to remain eighty, as at present, but that the salary of each of these physicians is to be increased to $500.

SEIZURE OF CATSUP AT BOSTON. — On Feb. 13, at Boston, the United States deputy marshal made a seizure of thirty barrels, containing a total of fifteen hundred gallons, of tomato catsup, valued at three hundred dollars. This catsup, which is part of a large consignment from a New York firm, is declared by government officials to be made of "canners' waste," and, therefore, unfit for consumption under the provisions of the pure food law.

TWO BEQUESTS FOR HOSPITALS. — It was announced last week by the executor of the estate of the late John G. Aborn, of Wakefield, Mass., that the latter had bequeathed to the town a

tract of two and one-tenth acres of land overlooking Lake Quannapowitt, to be used as the site for a general hospital and a home for aged men.

The will of the late Alice M. Curtis, of Wellesley, Mass., filed last week for probate in the Norfolk Probate Registry at Dedham, Mass., contains a bequest of $20,000 to the New England Hospital for Women and Children, the income to be used for the support of free beds. This hospital is also made one of three beneficiaries under a residuary fund.

Anti-Vivisection Exhibit in Boston. — It is announced that there is to be held in Boston next week by the New England Anti-Vivisection Society, "a loan exhibit displaying the appliances and picturing the inhumanity of vivisection." On March 1, in Lorimer Hall, Dr. Herbert Snow, of England, is to lecture on the subject of the anti-vivisection crusade. This exhibit and, if possible, the lecture, should be attended by physicians interested in the safeguarding of legitimate animal experimentation, for the purpose of becoming familiar with both the arguments and the misrepresentations of the anti-vivisectionists, which must be intelligently controverted and exposed in the defense of scientific methods of inquiry.

Accidental and Intentional Trauma by Hatpins. — On Feb. 13 Capt. Andrew Englund, of Portland, Me., died in the Boston City Hospital of facial erysipelas, alleged to have developed at the site of several scratches accidentally received on Jan. 15 from the hatpin of a passenger beside whom he was riding in a street car. Though it is perhaps unfair to attribute this death directly to the injuries by the hatpin, the episode calls attention to another of the dangerous possibilities of that implement, hitherto chiefly familiar to surgeons as a perforative weapon of defense.

Meeting on the Prevention of Blindness. — At a meeting held in Boston on Feb. 14 by the Massachusetts Association for Promoting the Interests of the Blind, the principal address was delivered by Dr. F. Park Lewis, of Buffalo, N. Y., chairman of the committee of the American Medical Association on the prevention of blindness, who spoke on "Good Vision as an Economic Asset." Other addresses were made by Mr. James P. Munroe, chairman of the Massachusetts State Commission for the Blind; by Mr. Henry C. Greene; by Dr. Mark W. Richardson, secretary of the Massachusetts State Board of Health; by Miss Helen Keller; and by Dr. David Snedden, commissioner of education for Massachusetts.

Two Proposed Pieces of Legislation. — A resolve has been introduced before the Massachusetts Legislature providing "that there be allowed and paid out of the treasury of the commonwealth to the trustees of the Massachusetts Homœopathic Hospital in Massachusetts, the sum of fifty thousand dollars for the extension and enlargement of its buildings and for the maintenance of said hospital." This proposed measure has been referred to the House committee on public charitable institutions.

Another bill brought before the legislature provides for the licensing by local police departments of such persons as "practice manicuring or massage or conduct an establishment for the giving of vapor baths for hire or reward." The bill gives to members of police departments "the right to enter and inspect premises" in which such employments are conducted, and provides fine or imprisonment as a penalty for interference with this right or for the practice of such occupations without a license. This measure has been referred to the House committee on public health.

Annual Meeting, Boston City Hospital Alumni Association. — The annual meeting of the Boston City Hospital Alumni Association was held on Wednesday, Feb. 15, 1911.

In the morning, medical and surgical cases were shown in the amphitheater of the hospital, after which a luncheon was given to the members by the trustees.

The annual business meeting was held at the Hotel Vendome at 6.30 o'clock. The following officers were elected for the year 1911–1912:

President, Dr. Henry W. Broughton, of Jamaica Plain; Vice-President, Dr. Hayward W. Cushing, of Boston; Secretary, Dr. William H. Robey, Jr., of Boston; Treasurer, Dr. William R. P. Emerson, of Boston; Member of the Executive Committee for five years, Dr. Charles H. Hare, of Boston.

The President, Dr. George T. Tuttle, of Waverley, presided at the post-prandial exercises and introduced the following speakers:

Mr. A. Shuman, President of the Board of Trustees; Dr. Francis B. Harrington, of the Massachusetts General Hospital; Dr. Charles W. Eliot, of Harvard University; Arthur D. Hill, Esq., of the Suffolk Bar; Dr. Henry W. Broughton, President-Elect.

Mr. A. Shuman was made an honorary member of the association.

One hundred and five members were present.

NEW YORK.

ENLARGEMENT OF SKIN AND CANCER HOSPITAL. — At the New York Skin and Cancer Hospital, on Feb. 17, the newly completed wards for advanced cases and the new nurses' home were thrown open for public inspection. The recently installed fulguration apparatus of Dr. Keating Hart, of Paris, and other new electrical appliances were also exhibited.

STATE RESERVATION AT SARATOGA SPRINGS. — In carrying out the plan of establishing a state reservation at Saratoga Springs, for which the Legislature in 1909 appropriated $600,000, the Reservation Commission, on Feb. 16, filed with the proper officers documents preliminary to acquiring three of the spring properties, with an adjoining tract of land. The springs condemned in order that a price may be fixed for their purchase are the Hathorn 1 and 2 and the Carlsbad.

CAMPAIGN AGAINST TUBERCULOSIS. — On Feb. 13 a mass meeting in the interests of the campaign against tuberculosis was held at the Academy of Music, Brooklyn, under the auspices of the Brooklyn Bureau of Charities. A number of addresses were made, and a series of stereopticon pictures were presented, showing tenement-house conditions previous to the passage of correcting laws, some bad conditions still existing, and the improvements which had been and were being made in housing conditions.

TUBERCULOSIS IN PRISONS. — At the meeting of the Society of Medical Jurisprudence on Feb. 13, Dr. J. B. Ransom, physician to the Clinton Prison at Dannemora, N. Y., gave an address on "Tuberculosis in Prisons." There was no greater error, he said, than to suppose that, because of the isolation of these institutions, tuberculosis in their inmates does not constitute a grave danger to society at large. There were 20,000 tuberculous prisoners in the penal institutions of the United States, and the vast majority of these, when liberated, returned to that portion of the community in which tuberculosis is most quickly and virulently spread. The statistics presented by Dr. Ransom showed that 60% of all deaths in the prisons of the world are due to this disease, and that at times the mortality has reached 80%. Tuberculosis is much more prevalent among the inmates of the prisons in the Atlantic and Middle West states than among prisoners in the Southern and Western states; a condition due to the fact that the latter are put to work in the open air. Of the 5,000 prisoners in New York state, no less than 1,000 are the subjects of tuberculosis. Still, the speaker said, considerable gain had now been made by intelligent treatment, and at Clinton Prison the percentage of mortality among tuberculous patients had been reduced from 2,021 per 100,000 in 1891 to 160 per 100,000 in 1910. Having referred to the efforts at combatting the disease elsewhere, he urged the necessity of a systematic campaign for the treatment of tuberculous inmates of prisons and other public institutions, advocating as most important the establishment of special sanitariums and the providing of outdoor work.

CHRISTIAN SCIENCE HEALER HELD FOR TRIAL. — For the first time in New York a Christian Science healer has been brought to book for the illegal practice of medicine. Willis V. Cole, a practitioner of this class, maintaining a suite of offices on Fifth Avenue, had been summonsed to court by the County Medical Society on the charge of violating a section of the public health law, and on Feb. 11, in the Tombs police court, Magistrate Freschi held him for trial in the Court of Special Sessions. In concluding an extended opinion the magistrate said: "In view of all the circumstances of this case I am of the opinion that the practice of the treatment of disease by inaudible prayers, as taught by the book of Mrs. Eddy, violates the law of this state. The only thing on which the defendant can claim any right to practice as a 'healer' of disease is that the exception in the public health law excludes him from the operation of the definition of 'the practice of medicine.' [The law states that the definition given shall not be construed to affect the practice of the religious tenets of any church.] The Christian Scientist has the right to believe that he can heal by prayer, but I am of the opinion that if he carries and puts this belief into practice for hire, and solicits patients by advertisements, then he exceeds his rights under the law and comes directly within the prohibition contained in Article III of the Constitution of the State of New York. He must subordinate his belief to the rights of the community and the state as an entity when the exercise of that belief either impairs or endangers the health of the people or tends to place their health in jeopardy, so that the safety of the state will be affected." If Cole should be adjudged guilty in the Court of Special Sessions, the case will undoubtedly be appealed, as the matter is, of course, one of vital importance to the Eddyites.

# Current Literature.

## Medical Record.

### Jan. 7, 1911.

1. Bull, C. S. *The Increasing Frequency of Inherited Syphilis and the Grave Importance of Its Early Recognition in Infants and Young Children from the Standpoint of the Ophthalmologist.*
2. MacDonald, C. F. *Hints for the General Practitioner on the Nature, Etiology and Early Diagnosis of Insanity.*
3. Collins, J., and Sheldon, L. *Pellagra: A Brief Review of the Theories of Its Causation, with the Report of a Case Occurring in New York City.*
4. Evans, W. A. *Ventilation of Kitchens and Bakeries.*
5. Tobie, W. E. *Surgical Anatomy of the Abdominal Wall with Reference to Appendectomy.*
6. *Wallace, R. *A Theory as to the Untoward Effects of Diphtheria Antitoxin; Prophylaxis in Suspicious Cases.*
7. Clurman, M. J. *The American Game of Football: Is It a Factor for Good or for Evil?*

6. Wallace emphasises the danger of using diphtheria antitoxin or any other form of horse serum in individuals with unstable vasomotor systems and in those subject to asthma, hay fever and bronchitis. It is in such persons that we see serum disease and rarely sudden death after injection. The administration hypodermically of aqueous extracts of the suprarenal glands previous to the use of serum in this class of cases is desirable in order to rehabilitate and control the vasomotor system, and may prove of great prophylactic value as well as useful in the emergency of an acute attack of serum disease. [L. D. C.]

### Jan. 14, 1911.

1. Lambert, S. W. *Some Recent Experiences with the New Specific Remedy, Ehrlich "606."*
2. Cornwall, E. E. *Some Practical Points in the Treatment of Diseases of the Heart.*
3. King, W. H. *The Treatment of Chronic Appendicitis with High-Frequency Currents.*
4. Klingmann, T. *The Future of Psychotherapy.*
5. Gross, M. *Duodenitis.*
6. Skinner, E. H. *Gastric Röntgenology.*

### Jan. 21, 1911.

1. Wyeth, J. A. *Memorial Address on Dr. Robert Koch.*
2. Knopf, S. A. *In Memory of Robert Koch.*
3. Einhorn, M. *On Pylorospasm.*
4. Johnson, A. B. *Some Remarks on the Surgical Diseases of the Biliary Passages.*
5. Harvey, T. W. *Oliver Wendell Holmes; His Work in Establishing the Contagious Nature of Childbed Fever.*
6. Naschar, I. L. *Senile Debility.*
7. Barnes, W. S. *Ichthyol in Pulmonary Diseases.*
8. Darling, C. G. *Non-Parasitic Cyst of the Spleen; Splenectomy.*

### Jan. 28, 1911.

1. Bulkley, L. D. *Personal Experience with a Very Restricted Diet (Rice) in Acute Inflammatory Disease of the Skin.*
2. Stokes, C. F. *The Surgical Aspects of Filariasis.*
3. *Weber, L. *Camphor in Large Doses in Pneumonia.*
4. Phillips, W. C. *Infant Mortality in New York City.*
5. Whitney, C. M. *Concealed Chancre of the Male Urethra, with a Study of Thirty-Eight Cases.*
6. Buchanan, J. J. *Treatment of Peritonitis Consecutive to Appendicitis.*
7. Crothers, T. D. *Inebriety: Its Treatment and Curability.*

3. Weber reports a desperate case of pneumonia in which he used hypodermic injections of camphorated oil. One dram of a freshly prepared solution, 20% camphor in oil of sweet almonds, was injected into the outer circumference of the thighs every hour until eight had been given. This was repeated on the three succeeding days. In the four days the patient received about 120 gr. of camphor. Recovery followed and the writer evidently believes that the camphor had something to do with it. [L. D. C.]

## New York Medical Journal.

### Feb. 4, 1911.

1. Pollitzer, S. *Salvarsan (Ehrlich-Hata "606") in Syphilis.*
2. Nammack, C. E. *Diet in Typhoid Fever.*
3. *Bachmann, G. *The Measurement of Arterial Pressure in Man.*
4. Pisko, E. *The Treatment of Skin Diseases with Solid Carbon Dioxide Snow and Demonstration of the Method.*
5. Baetz, W. *Report of a Case of American Relapsing Fever.*
6. Saphir, J. F. *Syringe for Local Anesthesia in Rectal Operations.*
7. Strunsky, M. *To Avoid Mistakes in the Diagnosis of Foot Troubles.*
8. Blake, E. M. *Pneumocele of the Lachrymal Sac.*
9. *The Literature of Salvarsan.*

3. Bachmann maintains that the Riva-Rocci and other methods of estimating blood pressure from the disappearance of the arterial pulsation at some distance from the point of compression are essentially faulty and the results obtained necessarily erroneous. It can be shown, he says, that while the radial pulse has disappeared, there may be a pronounced pulsation in the part of the brachial artery under compression. All such sources of error are removed by the sphygmometric oscillometer recently devised by Pachon. The writer appends a table showing blood-pressure readings obtained with both the Pachon and Riva-Rocci instruments on a large number of individuals of all ages. According to these observations, the systolic pressure estimated by the Riva-Rocci method averages 20 to 40 mm. lower than when estimated with the Pachon instrument. [L. D. C.]

### Feb. 11, 1911.

1. Wright, J. *A Contribution to the Study of Fats and Lipoids in Animal Tissue.*
2. Heiser, V. G. *Unsolved Health Problems Peculiar to the Philippines.*
3. Woodbury, F. T. *Some Further Observations on Iodine as an Antiseptic.*
4. Whitall, J. D. *Sarcoma (Round Cell) of the Submaxillary Gland.*
5. Lowenburg, H. *Congenital Hypertrophic Pyloric Stenosis.*
6. Page, J. R. *The Treatment of Otitis Media Purulenta and Mastoiditis in Infants.*
7. Robinson, B. *Treatment of Pneumonia with Creosote Inhalations.*
8. Hall, R. B. *Further Observations on Cysts of the Pancreas.*
9. Silverstein, B. J. *Two Cases of Tetanus following Vaccination.*
10. Koenig, C. J. *Treatment of Singer's Nodules or of Other Excrescences of the Vocal Cords by Galvanocauterization. A New Protected Cautery.*

## The Journal of the American Medical Association.

### Feb. 11, 1911.

1. Cullen, T. S. *Surgical Diseases of the Umbilicus.*
2. *Coffey, R. C. *Physiologic Implantation of the Severed Ureter or Common Bile Duct into the Intestine.*
3. Frank, J. *Carcinoma of the Cecum.*
4. Brumbaugh, A. S. *A Home-Made Electric Centrifuge.*
5. Fischer, L. *Syphilis in Children.*
6. Wesbrook, F. F. *Life and Health as National Assets.*
7. Ehrenfried, A. *Picric Acid and Its Surgical Applications.*
8. *Kahlo, G. D. *Colitis.*
9. Dencker, C. *Case of Extensive Leukemic Infiltration of the Mammary Glands and Skin.*
10. Rosenow, E. C. *A New Stain for Bacterial Capsules, with Special Reference to Pneumococci.*
11. Taylor, A. E. *A Probable Case of Anaphylaxis.*
12. Mark, E. G. *A Case of Air Embolism Occurring during Operation under Air-Inflation Urethroscopy.*

13. SCRIPTURE, E. B. *Cause and Treatment of Defective Mutation of the Voice.*

2. Coffey found that, in the direct transplantation of the common bile duct into the intestine, the intestinal pressure caused a very marked and serious dilation of the duct. This he was able to avoid almost wholly by making a physiologic transplantation under the peritoneal and muscular coats of the intestine for about one half to three fourths of an inch before the duct was made to enter the mucous layer. This simulates nature's way or the anatomy of the entrance of the common duct into the intestine. This he also did in implanting ureters into the intestine in dogs and found that the mortality from ascending infections along the ureters from the intestine was practically eliminated by this physiologic method of transplantation.

8. Kahlo emphasizes the neurotic influence in practically all forms of colitis. Mental depression of some degree is a very constant feature. Many of the symptoms may be due to the underlying neurotic element, but most of them, he believes, are the result of auto-intoxication, as they usually disappear as soon as the digestive disturbance is relieved. Gastric disorders are the most common complications of colitis. Treatment should be for the individual and not bound by any set rule. He believes that practically all of that severe type of cases for which appendicostomy and cecostomy are recommended can be cured by medical means and quotes Richardson, who says, "Operations on the neurasthenic return nothing to the patient. Her last state is worse than her first, and is often pitiable. The best rule is to forbid surgery until every medical and palliative measure has proved useless." [E. H. R.]

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

FEBRUARY, 1911.

1. *FORCHHEIMER, F. *The Medical Treatment of Diabetes Mellitus.*
2. *FOSTER, N. B. *The Dietetic Treatment of Diabetes Mellitus.*
3. *STONER, H. W. *A Résumé of Vaccine Therapy.*
4. *DEAVER, J. B. *Malignant Disease as a Problem of Modern Surgery.*
5. *HUNT, J. R. *The Thenar and Hypothenar Types of Neural Atrophy of the Hand.*
6. *COAKLEY, C. G. *The Association of Suppurative Disease of the Nasal Accessory Sinuses and Acute Otitis Media in Adults.*
7. *DANA, C. L. *The Metabolic Changes in Hematoporphyrinuria not of Drug Origin.*
8. PEMBERTON, R. *A Metabolic Study of Myotonia Atrophica.*
9. *JONES, G. I. *Chronic Influenza and Its Relation to Neuropathy.*

1. Forchheimer considers that the drug treatment of diabetes mellitus has been unduly neglected. On empirical grounds, as illustrated by cases which he reports, he recommends the trial of arsenic (Fowler's solution), of hexamethylenamine, and of belladonna.

2. Foster's article is an extremely useful description of the dietetic treatment of diabetes as applied to the individual patient. Its chief value, however, lies in its attention to details which cannot be abstracted. Comprehensive diet tables are given, and numerous receipts for the preparation of diabetic foods.

3. Stoner has collected with great care the literature of vaccine therapy as applied to a wide range of diseases, both in prophylaxis and in treatment. General infections are first considered, then local infections of the different systems of the body, and also diseases in which the infectious element is not clearly established. From the results he concludes that vaccines should only be employed, first, in general infections after blood cultures have been made and the infecting organism identified; and, second, in local infections in which the organism has been isolated and identified or in which the symptoms are so marked that a mistake in diagnosis is beyond a possibility.

4. Deaver reviews the various theories as to the etiology of malignant disease, but without new conclusions. His article is mainly a plea for early diagnosis, since carcinoma is in its beginning essentially a localised process theoretically susceptible of surgical eradication.

5. Hunt maintains that in addition to the atrophic paralysis of the hand having origin in disease of the spinal cord or of the muscles themselves there should be recognised an atrophic paralysis of *neural* origin. This condition he describes as of two types, the *hypothenar type*, in the distribution of the ulnar nerve, and the *thenar type*, in the distribution of the median nerve. He reports cases in which these nerves have been subject to pressure in the work of the patient; alcoholic excess seems also to have been a factor.

6. Coakley has found that of a series of cases of acute otitis media, 81% had sinus disease, and that of cases of acute sinusitis, 42% had acute otitis media. The likelihood of a causal relation between the two is strengthened by the fact that they were usually found to be on the same side.

7. Dana reports a case of hematoporphyrinuria following apoplexy not to be traced to drugs ingested. From the absence of hematin in the urine he believes the disease to be independent of hemorrhage or hemolysis, — more probably a disorder of metabolism.

9. Jones emphasizes the frequent occurrence of influenza as a chronic infection and its possible rôle as a contributing cause of nervous exhaustion, neuroses and other symptoms. [F. W. P.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 3.

JAN. 19, 1911.

1. ELSCHNIG. *The Pathology and Treatment of Injuries to the Eye. III.*
2. *FORLANINI, C. *Artificial Supplementary Bilateral Pneumothorax.*
3. IVERSEN, J., AND TUSCHINSKI, M. *The Effect of Salvarsan in Malaria.*
4. v. BÓKAY, J. *Successful Treatment of Chorea Minor with Salvarsan.*
5. WERNER, H. *The Technic of Intravenous Injection of Salvarsan.*
6. BORNSTEIN, A. *Fate of Salvarsan in the Body.*
7. ECKERT. *The Acute Stage of Epidemic Infantile Paralysis, with Report of a Case of Poliomyelitis Fulminans.*
8. PLATE, E. *Origin and Treatment of Scoliotic Sciatica.*
9. MENDEL, F. *Emanation Therapy by Means of Intramuscular Radiogen Injections.*
10. EBERHARDT, O. *Primary Tuberculosis of the Buccal Mucous Membrane and Lower Jaw after Tooth Extraction.*
11. GORDON. *The Question of the Practical Value of Tuberculin Fever Reaction and the Treatment of Tuberculosis with Albumen-Free Tuberculin Endotin.*
12. GABRILOWITSCH. *Remarks on Endotin, the Specific Substance of Koch's Old Tuberculin.*
13. JOCHMANN AND MÖLLERS. *Rejoinder to the Above Remarks of Drs. Gabrilowitsch and Gordon.*
14. BLOS, E. *The Technic of Pubiotomy: The Pelvic Clamp, a New Instrument.*

2. Forlanini considers that artificial pneumothorax may actually heal pulmonary tuberculosis and that after the operation the lung expands to its full extent again. The earlier the process and the less extensive, the more successful the full lung expansion, but even after long relaxation the lung will expand to normal again. Thus, if a second lesion should eventually occur in the second lung it would be perfectly proper to make an artificial pneumothorax there also. [C. F., JR.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 3.

JAN. 17, 1911.

1. *v. WASIELEWSKI, T. *Demonstration of Ameba.*
2. SCHICKELE, G. *Active Substances in Uterus and Ovary.*
3. BECK, O. *Observations on the Behavior of the Human Ear in Syphilitics Treated with Salvarsan.*
4. JOLLY, P. *The Prognosis of Puerperal Psychoses.*
5. KIRSCHNER, M., AND MANGOLD, E. *The Motor Function of the Sphincter Pylori and of the Antrum Pylori in the Dog after Transverse Section of the Stomach.*
6. WALCHER, G. *Molding the Head of the Infant at Will.*

7. Klausner, E. *Transmission to Guinea Pigs of Hypersensitiveness to Antipyrin.*
8. Berndt, F. *Two Technical Communications.*
9. Hofmann, A. *Modern Painting with Iodine and Its More Extensive Application.*
10. Köhler, A. *The Teleröntgenograph and Universal Frame.*
11. v. Notthofft. *Urinary Pigmentation after Eating Mushrooms.*
12. Runte, H. *Congenital Defect of the Fibula and Pes Equino-valgus.*
13. Fehsenfeld, G. *The Effect of Canadian Hemp in Chronic Cardiac Insufficiency.*
14. May, R. *The New Royal Polyclinic at Munich.* (Conclusion.)
15. Rühl, K. *Angelo Mosso.*
16. Neumann, O. P. *Scientific Healing and Its Adversaries.*

1. The writer describes various methods of staining amebæ, and of making permanent smears and sections of suspected material for further study. He thinks that these methods will increase our knowledge of the distribution and varieties of amebæ and urges that they be looked for systematically not only in normal stools in chronic indigestion of patients from the tropics, but also in chronic bone diseases, particularly of the lower jaw, in cervical adenitis, in diseases of the genito-urinary system and in exudate from the pleural cavity and peritoneum. [G. C. S.]

Berliner Klinische Wochenschrift. No. 3.

Jan. 16, 1911.

1. Staehelin, R. *Polycythemia.*
2. Magnus-Levy, A. *The Courses of Treatment as Devised by Karell, Oertel, and Widal and Strauss. The Principle and Application of Each.*
3. *Bruck, C. *The Use of Venesection and Salt Infusion in the Treatment of Skin Diseases.*
4. Bolten, G. C. *Landry's Paralysis.*
5. Allard, E. *Clinical Observations on Anaphylactic Attacks after Serum Injections.*
6. Lorenz, F. *Supplement to the Antiformin Method of Staining Tubercle Bacilli.*
7. Ley, H. *The Diagnosis of Gastric Carcinoma by Means of the Fischer-Neubauer Method of Splitting the Glycyltryptophan.*
8. Stiller, B. *A Word Concerning the Bismuth Stomach.*
9. Passow, A. *Otiatrics in Berlin.*

3. The author gives the theoretical grounds for the use of venesection and saline infusion in the treatment of diseases of the skin. He describes the technic in detail. In the report of eight cases he states the amount of blood withdrawn and the amount of salt solution used in each case. The results he has obtained in the treatment, by this method, of cases of pruritus universalis, urticaria, erythema exsudativum multiforme and dermatitis herpetiformis, have been so satisfactory that he feels that this treatment should have wider use. [J. L. H.]

No. 4. Jan. 23, 1911.

1. *Coenen, H. *Cyst Formations in the Kidney, Liver and Spleen and Their Origin.*
2. *Holzknecht, G. *Recent Progress in X-Ray Examination of the Digestive Tract.*
3. Lesser, F. *The Modes of Action and Methods of Application of Salvarsan.*
4. Strandberg, O. *The Treatment of Lupus of the Nose by Means of Sodium Iodide and Peroxide of Hydrogen after the Method of Dr. S. A. Pfannenstiel.*
5. Klausner, E. *A More Rapid Method of Staining the Spirocheta Pallida.*
6. Laser, E. *The Diagnostic Value of the Findings at the Apices of the Lung.*
7. Aronsohn, O. *The Psychology and Treatment of Stuttering.*
8. *Schlenska, A. *A New Goldschmidt's Prostatic Incisor.*
9. Maier, G. *A Case of Paraldehyde Poisoning.*

1. Coenen describes the various forms of cystic degeneration found in the kidneys, liver and spleen and discusses at length the probable explanation for their origin. The article contains several illustrations showing the gross and microscopical anatomy of these structures. The length of the bibliography shows the thoroughness of the article.

2. Holzknecht shows how the x-ray may be employed as a method of diagnosis throughout the length of the gastro-enteric tract. The article is profusely illustrated.

8. Schlenska, by text and diagram, describes a new instrument for operations in the region of the prostate. The instrument is designed so that operations in this portion of the urethra can be carried on under the eye of the operator. [J. L. H.]

Deutsche Zeitschrift für Chirugie. Bd. 108.

Heft 1–2. December, 1910.

1. *Läwen, A. *Extradural Anesthesia for Surgical Operations.*
2. Bardenheuer. *The Origin and Treatment of Ischemic Muscle Contracture and Gangrene.*
3. Heidenhain, L. *A Method for Replacing Skin Removed after Amputations of the Breast.*

1. Läwen reviews the work which has been done on extradural anesthesia from 1901, when it was first performed by Cathelin, and points out the errors in technic which have thrown the method into disrepute.

He lays special stress on three points: First, the choosing of a proper anesthetic agent. He used at first novocain chloride, but found that this did not give such uniform results as novocain bicarbonate. Secondly, he points out that, as in intradural anesthesia the patients are sitting up when they are injected, whereas he believes that the head should be lower than the pelvis. Thirdly, he points out that the nerve trunks have a thick, tough connective tissue sheath, which must be penetrated by a solution of the proper concentration.

He then gives a table of eighty operations such as hemorrhoids, fistulæ in ano and operations on the external genitalia where this form of anesthetic has been used by him with almost uniformly good result.

He gives in great detail the formulæ for the proper preparation of both the novocain chloride and the novocain bicarbonate solutions, and thoroughly explains the technic of the injections.

He explains that there are three possibilities by which the injections may cause anesthesia.

(1) By penetrating into the extradural space through the dural sheath.

(2) By filtering through the dura into the cerebrospinal fluid and acting as an ordinary lumbar intradural injection.

(3) By diffusing through the sacral foramen and penetrating the dural sheath to the nerve roots.

Läwen, however, considers that the first method is the correct explanation of the cause of anesthesia.

The remainder of the paper is an analysis of the tabulated operations done by this method. [J. B. S., Jr.]

Annales de l'Institut Pasteur.

Dec. 25, 1910.

1. Nicolle, M., and Touche, C. *Note on the Preservation of Soluble Toxines.*
2. Nicolle, M., and Mouton, H. *Note on Tetanus Toxin and Antitoxin.*
3. Nicolle, M., and Jouan, C. *Concerning the Action of Heat on Antitoxins.*
4. Bertrand, G., and Compton, A. *Researches on the Individuality of Cellase and of Emulsin.*
5. *Besredka, A., and Lessofsky, S. *Spinal Anaphylaxis and the Means of Avoiding It. X.*
6. *Leboeuf, A., and Ringenbach. *Some Hematozoa of the Congo: Trypanosomes, Micafilaria and Leucocytozoa.*
7. Fortineau, L. *Note on the Treatment of Anthrax by Pyocyanase.*
8. Fitzgerald, J. G. *Studies of Normal and Specific Spermotoxic Sera.*

5. Guinea pigs sensitized to a serum by subcutaneous injection react with anaphylactic symptoms to a fresh injection of the same serum in the spinal canal. If, how-

ever, the fatal dose is given into the spinal canal in small doses it loses its mortal action. These conclusions are some that these authors draw from their observations and experiments. They also find that this fatal dose loses its power when given in small doses, no matter in what manner, whether subcutaneously, intravenously or intraperitoneally, it is introduced. The anti-anaphylactic immunity obtained by the spinal injections lasts only twelve to fifteen days.

6. These authors describe in detail with accompanying photographs three types of parasite which appear in the lower animals' blood in the Congo. One is a trypanosome, the other a small filaria and the third a parasite which appears within the leucocytes. [C. F., JR.]

REVUE DE MÉDECINE.

DECEMBER, 1910.

1. DE BEURMANN, GOUGEROT, AND VAUCHER. *Gummy, Ulcerating, Disseminated Oidiomycosis. A New Mycosis Due to a New Parasite: The Oidium Cutaneum (Former Group of Blastomycoses).*
2. JANKELEVITCH, M. *Sickness and Mutation. A Contribution to the Pathogenesis of Cancer.*
3. SOLOMON, M., AND HALBRON, P. *Lesions of the Pancreas in Infantile Gastro-Enteritides.*
4. BAUR, J. *Hippocratism in Cardio-Vascular Affections.*

BULLETTINO DELLE SCIENZE MEDICHE.

DECEMBER, 1910.

1. *CUNEO, G. *Alterations of the Proteid Metabolism in Certain Diseases.*
2. SANFILIPPO, G. C. *Contribution to the Study of the Structure and Pathogenesis of the Atheromata.*

1. Cuneo continues his studies in the proteid metabolism of certain nervous and psychic affections. His first article (*Bullettino*, 1909, Vol. lxxx, pp. 449–464) dealt with trigeminal neuralgia; the present paper considers manic-depressive psychoses and dementia precox. He believes that the metabolic alterations observed in both classes of conditions do not have as much effect on the morbid process in the latter as in the former. He promises further continuance of his researches. [R. M. G.]

## Obituaries.

### HENRY POWER, M.B.

HENRY POWER, M.B. LOND., F.R.C.S. ENG., who died on Jan. 18 at Whitby, in Yorkshire, England, was one of the most eminent ophthalmologists in Great Britain. He was born at Nantes, in France, on Sept. 3, 1829, the son of a British army officer who had fought in the Peninsula and at Waterloo. On account of his father's frequent changes of residence, the boy obtained his early education at a number of different schools. In 1844, on his deciding to become a physician, he was apprenticed to a Mr. Wheeler, of London, who was afterwards chairman of the Board of Examiners at the Apothecaries' Hall. Subsequently Mr. Power took the medical course at the University of London, from which he graduated in 1855 with a scholarship and gold medal in physiology and comparative anatomy and in surgery. In 1851 he had been appointed demonstrator of anatomy at the Westminster Hospital, where he lectured for ten years. In 1856 he was appointed assistant surgeon to the Royal Westminster Ophthalmic Hospital and in 1857 to the Westminster Hospital. In 1867 he resigned the latter position to become ophthalmic surgeon to St. George's Hospital, and in 1870 was made first ophthalmic surgeon at St. Bartholomew's Hospital.

Mr. Power was a skillful operator, and in addition to his hospital duties had a large and successful private practice. He was interested in many branches of science besides medicine, and was a prolific writer and editor. He was professor of physiology at the Royal Veterinary College from 1881 to 1904; vice-president of the Royal College of Surgeons of England in 1885; and president of the Ophthalmological Society of the United Kingdom from 1890 to 1892. For over forty years he was a member of the editorial board of the *Lancet*. Nor were his activities limited to literary and professional fields. He was an excellent artist in pen and ink and water-colors, and illustrated many of his own publications. That he was a man of indefatigable industry is obvious. It is related of him that for many years he never went to bed till 2 A.M., and always rose at 6 for a walk or bicycle ride before breakfast. His health was excellent till shortly before his death, at the age of eighty-one. He is survived by a large family of children.

His life is of interest, not only as an example of great individual vigor, energy and versatility, but as a type of the finest professional product of English stock and English methods of education in a generation that is now, unhappily, passing away.

### EDWARD HITCHCOCK, M.D.

DR. EDWARD HITCHCOCK, who died on Feb. 15, at Amherst, Mass., was born in that city on May 23, 1828. He graduated from Amherst College in 1849, and in 1853 received the degree of M.D. from the Harvard Medical School. After teaching chemistry and natural history for several years at Williston Seminary, Easthampton, Mass., he went abroad to study comparative anatomy at the British Museum in London. In 1861 he returned to this country to become professor of hygiene and physical education at Amherst College, a position which he held until the time of his death. During this long period he was an enthusiastic advocate of the importance of physical training in the preparation for life, which should be the object of a college education, and was a pioneer in scientific work in this field. A published obituary notice says of him:

> "He was one of the most progressive men in the educational field. While a profound scholar, his activities were not limited to the cloister. He was as deeply concerned for the public welfare as for academic interests."

He was for many years a member of the Massachusetts State Board of Charity and a trustee of Mt. Holyoke College and of Williston Seminary. He was the author of a textbook on "Anatomy, Physiology and Anthropometry," and of numerous papers in his special subject. He is survived by his widow, by three daughters and by four sons.

## EDWARD STRONG BOGERT, M.D.

Dr. Edward Strong Bogert, who died on Feb. 16 in New York City, was born at Geneva, N. Y., on May 7, 1836. After graduating from the Medical Department of the University of the City of New York, he entered the United States Navy as an assistant surgeon on June 10, 1861. He served throughout the Civil War, and on April 6, 1866, was promoted to the rank of surgeon. From 1867 to 1870 he was assigned to the New York Naval Hospital Laboratory. Subsequently he served for four years at the Marine Barracks, Brooklyn, and was then detailed to sea duty on board the *Monongahela*. In 1883 he was made fleet surgeon of the Asiatic squadron, and later was detailed to the Brooklyn Navy Yard. In 1889 he was appointed president of the New York Naval Examining Board, and from 1892 to 1895 was in charge of the Naval Hospital at New York. On May 7, 1898, he was placed on the retired list with the rank of medical director, but during the Spanish War served as recruiting officer at the Charlestown Navy Yard. On June 29, 1906, he was advanced to the rank of rear admiral for services during the Civil War. He was a member of the Medical Society of Alumni of Bellevue Hospital. He is survived by one son, also a surgeon in the navy.

# Miscellany.

## INSTRUCTION OF HOSPITAL CORPS IN THE NAVY.

An order has recently been issued by the Secretary of the United States Navy Department with a view to systematizing and establishing uniformity in the instruction of members of the hospital corps aboard the vessels of the service. The details of this order are of interest as indicating the intended scope of the training in comparison with that given to male nurses in large civil hospitals.

"In order that the instruction of members of the hospital corps afloat may be conducted efficiently and in accordance with a definite and uniform system throughout the service, it is directed that instruction be given on the following subjects and in the following order aboard every ship of the navy to which there are two or more medical officers attached:

"1. Medical and surgical nursing.
"2. Materia medica and practical pharmacy.
"3. Emergency surgery and first aid; application of splints and occlusive dressings.
"4. Bandaging.
"5. Anatomy and physiology.
"6. Transportation methods.
"7. Aseptic operation drill; sterilisation; preparation of patient for operation.
"8. Review.
"9. Medical and surgical nursing.
"10. Materia medica and practical pharmacy.
"11. Emergency surgery and first aid.
"12. Bandaging.
"13. Hygiene; personal and ship hygiene; venereal prophylaxis.
"14. Medical records; care of instruments and medical stores.
"15. Emergency surgery and first aid.
"16. Quiz and general review.

"To attain satisfactory results, instruction shall be given, so far as practicable, on four days of each week, for a one-half hour period on each day, in accordance with the schedule given above, the schedule being repeated beginning with the seventeenth day of such instruction. The course shall be so planned as to be continuous and progressive throughout the cruise. In addition to the course given above, each hospital apprentice, during his day's duty, shall be given an opportunity to learn by practical experience the proper methods of keeping sick-bay records regarding treatment, temperature, diet, etc., the use of proper forms and the methodical tabulation of such data. To this end, hospital apprentices shall be detailed for duty of sick-bay recorder. The medical officer of the ship shall assure himself that the hospital steward is properly qualified to carry out his work as an instructor, and shall take such measures as may be necessary to see that he is thoroughly informed in the duties of his rating."

Such a scheme of instruction, conscientiously carried out, should afford a very thorough and useful education in the duties of the hospital orderly, and might to advantage be imitated by many institutions ashore.

## CONTINUANCE OF THE PLAGUE IN ASIA.

Reports from Asia indicate that the epidemic of bubonic plague, though checked to some extent in southern Manchuria, continues to spread through the northern districts of that country. There are said to be still 250 deaths daily in Harbin. At Shantung 12 physicians and over 1,000 natives have died. At Pu Chia Tien there have been over 1,800 deaths, and at Chefoo, 300. In China, over 1,000 deaths are reported to have occurred within the circuit of the Great Wall, and it is estimated that the epidemic has thus far cost 65,000 lives. The intense cold, which further augments the sufferings of the people, has frozen the ground so hard as to make burial impossible, and the bodies are piled in hundreds awaiting cremation. Despatches from St. Petersburg, on Feb. 17, state that bubonic plague has appeared in Astrakhan, on the coast of the Caspian Sea, and up to Feb. 8 had caused 30 deaths in that province. It is announced that the first meeting of the international medical congress to consider the plague problem will be held at Mukden on April 3. Dr. G. Galeotti, director of the pathological institute of the University of Naples, has been invited by the Chinese government to act as its representative.

## Correspondence.

### TREATMENT OF PHTHISIS BY ANTISEPTIC INHALATION.

BOSTON, Feb. 15, 1911.

*Mr. Editor:* In the issue of the JOURNAL of Feb. 9, page 213, you make editorial comment on the article of Dr. I. Burney Yeo, of London, in the *Lancet* on "Pulmonary Tuberculosis Treated by Continuous Antiseptic Inhalation," stating that "this deserves the attention of the profession." There are constantly appearing isolated cases of pulmonary tuberculosis treated by this method. Dr. Beverly Robinson, of New York, as you state, is the leading exponent of this method in this country. Dr. Lees, of England, and Dr. Maggiorani, of Rome, and others have reported similar cases. A large number of these cases have been at a sanatorium while undergoing this treatment.

Both in this country and in Europe, the inhalation treatment of pulmonary tuberculosis has been tried and found wanting. If it has not been found of value by such authorities as Dr. Trudeau, the late Dr. Janeway, Dr. Miller, Dr. Baldwin, Dr. Vincent Bowditch and innumerable others, I believe it is stretching a point to say that it deserves the attention of the profession; it would seem a great pity if, from the approval of this method by the JOURNAL, any consumptives were given this treatment of somewhat doubtful value at the expense of the known advantages of sanatorium methods.

Very truly yours,

JOHN B. HAWES, 2d, M.D.

[In the issue of the *Lancet* for Jan. 28, on page 262, are communications from Dr. Dundas Grant, of London, and from Dr. C. Muthu, of the Mendip Hills Sanatorium, Wells, both endorsing Dr. Yeo's recommendation of continuous antiseptic inhalation and reporting favorable results from its use. The item in our *Miscellany* was intended for information rather than unqualified approval. Even though antiseptic inhalation have no curative value, there is no proof that it is not a useful palliative agent in conjunction with sanatorium treatment or otherwise. — ED.]

### RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, FEB. 11, 1911.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | — | — | Waltham | 6 | 0 |
| Chicago | 663 | 168 | Brookline | 6 | — |
| Philadelphia | — | — | Chicopee | 8 | 3 |
| St. Louis | — | — | Gloucester | 6 | — |
| Baltimore | — | — | Medford | 7 | 3 |
| Cleveland | — | — | North Adams | 8 | 2 |
| Buffalo | — | — | Northampton | 8 | 1 |
| Pittsburg | — | — | Beverly | 4 | 1 |
| Cincinnati | — | — | Revere | 5 | 2 |
| Milwaukee | — | — | Leominster | 5 | 2 |
| Washington | — | — | Attleboro | 2 | 0 |
| Providence | — | — | Westfield | 9 | 1 |
| Boston | 280 | 60 | Peabody | 5 | — |
| Worcester | 40 | 4 | Melrose | 5 | 0 |
| Fall River | 42 | 21 | Hyde Park | 3 | 0 |
| Lowell | 38 | 5 | Woburn | 5 | 1 |
| Cambridge | 43 | 15 | Newburyport | 8 | 1 |
| New Bedford | 44 | 10 | Gardner | 3 | 0 |
| Lynn | 27 | 7 | Marlboro | 4 | 1 |
| Springfield | 34 | 2 | Clinton | 8 | 2 |
| Lawrence | 40 | 14 | Milford | 4 | 2 |
| Somerville | 20 | 3 | Adams | 2 | 1 |
| Holyoke | 23 | 7 | Framingham | — | — |
| Brockton | 13 | 1 | Weymouth | — | — |
| Malden | 18 | 4 | Watertown | 1 | 1 |
| Haverhill | 18 | — | Southbridge | 1 | — |
| Salem | 22 | 5 | Plymouth | — | — |
| Newton | 17 | 5 | Webster | 6 | 2 |
| Fitchburg | 11 | 4 | Methuen | — | — |
| Taunton | 14 | 3 | Wakefield | 3 | — |
| Everett | 7 | — | Arlington | 1 | 1 |
| Quincy | — | — | Greenfield | 1 | — |
| Chelsea | 11 | 1 | Winthrop | 3 | — |
| Pittsfield | 14 | 4 | | | |

### SOCIETY NOTICES.

THE NORFOLK DISTRICT MEDICAL SOCIETY. — A regular meeting of the society will be held at Masonic Temple, 171 Warren Street, Roxbury, Tuesday, Feb. 28, at 8 o'clock. Business. Communication: "Some Remarks on Sequels of Laparotomies," James A. Riley, M.D. Discussion by E. W. Cushing, M.D.; W. P. Bolles, M.D.; A. N. Broughton, M.D.; J. C. Stedman, M.D. Refreshments after the meeting.

BRADFORD KENT, M.D., *Secretary*,
798 Blue Hill Ave., Dorchester.

THE ESSEX SOUTH DISTRICT MEDICAL SOCIETY. — The fourth meeting of the year was held at the Lynn Historical Society Rooms, Exchange Street, Lynn, on Tuesday evening, Feb. 21, 1911. Dr. William S. Gotthell, Professor of Dermatology at the New York Post-Graduate Medical School, addressed the meeting on "Syphilis in Picture." After this he read a short paper on "The Present Status of the Arseno-Benzol Treatment" (606). The discussion was opened by Drs. Johnson and Bangs of Lynn.

INSTRUCTIVE DISTRICT NURSING ASSOCIATION. — The twenty-fifth annual meeting was held at the Hotel Vendome, on Thursday, Feb. 23, at 3 o'clock. The annual report was presented and officers for the ensuing year elected. Miss Martha H. Stark, superintendent of staff nurses, made a report, and addresses were given by Miss Alice L. Higgins, general secretary, Associated Charities; Dr. Howard T. Swain, senior physician to out-patients, Boston Lying-In Hospital; Mr. M. M. Davis, Jr., director of Boston Dispensary, who spoke on "The District Nurse and the Community."

### RECENT DEATHS.

NICOLA, CHARLES CHESTERFIELD, M.D., M.M.S.S., died at sea, Feb. 6, 1911, aged forty-four years. Residence and office, Attleboro, before death.

DR. THOMAS MARKLEY TREGO, of Albany, N. Y., a descendant of Peter Trego, who came to this country with William Penn, died on Feb. 15. He was born in New York City on Aug. 31, 1847, and was graduated from Rutgers College in 1870 and from the College of Physicians and Surgeons, New York, in 1874. At the time of his death he was physician to the Child's Hospital and other institutions in Albany.

DR. BENJAMIN T. ABBOTT, of Ocean City, N. J., died suddenly on Feb. 17. He was sixty-seven years of age, and was graduated from Jefferson Medical College in 1870.

DR. EDWIN D. LEIDY, of Flemington, N. J., died on Feb. 17. He was fifty-three years of age, and was graduated from Jefferson Medical College in 1885.

DR. CHARLES F. KINGSBURY, who died last week at West Medford, Mass., was born in Gilsum, N. H. He practiced medicine first at Stoddard, N. H., and later at Lyme, N. H. He served for three years as chairman of the New Hampshire State Board of Agriculture. In 1888 he retired from active practice.

DR. THOMAS JAMES MANAHAN, who died on Feb. 14 at Brookline, Mass., was born in Boston in 1873. He received the degree of S.B. from Harvard in 1896, and that of M.D. in 1899. In 1898 he served as first assistant surgeon on board the hospital ship *Bay State* during the Spanish-American War. In 1899 to 1900 he was a surgical house officer at the Massachusetts General Hospital. He is survived by his widow, by two sisters, and by six brothers.

FRANK ORLANDO WEBBER, M.D., M.M.S.S., died of pneumonia, on Feb. 14, at Cambridge, Mass., aged fifty-six years. He was born in that city on March 15, 1855, the son of a physician. After studying for two years in the Massachusetts Institute of Technology, he entered the Harvard Medical School, from which he received the degree of M.D. in 1877. He had practiced medicine in Cambridge from that time until his death. He is survived by his widow and by three brothers.

WILLIAM PALMER CHISHOLM, M.D., M.M.S.S., of Brockton, Mass., died at Taunton, Mass., on Feb. 16, at the age of fifty-seven years. He was born in Nova Scotia, but came to Brockton in 1870. He received his medical degree in 1881 from the University of New York, and for over twenty-five years was a well-known practitioner in Plymouth County. He was a Fellow of The Massachusetts Medical Society, and a member of the Plymouth County Medical Society and of the Brockton Medical Society. He is survived by his widow, by two daughters, and by one son.

DR. AMMON FARNSWORTH DAVENPORT, who died on Feb. 17, at North Adams, Mass., was born in Colerain, Mass., on Oct. 24, 1837, the son of a physician. He studied medicine for a time at the Berkshire Medical College in Pittsfield, Mass., but subsequently went to the Pennsylvania College of Dental Surgery, from which he graduated in 1868. After practicing for several years in New York City, he finally settled at North Adams. He was a member of the American Dental Association and of the Massachusetts State Dental Association, and a member and former president of the Connecticut Valley Dental Association. He is survived by his widow, by one daughter and by one son.

## Symposium.

### STUDIES IN INTESTINAL DISTURBANCES IN INFANTS.

### I. LOOKING BACKWARD.

BY WILLIAM E. FAY, M.D., BOSTON.

THE progressive steps in the care and treatment of infants and young children in the Floating Hospital in the past ten years is of interest in its constantly advancing parallel with the general progress of knowledge in pediatrics and its adaptation to the needs of the community.

Formerly there was a great variety in the maladies for which the little patients were received. The sea air was sought for all.

In cases of extreme infancy and premature cases, their sensitiveness to sudden changes in the weather made protection difficult.

Infants with six months' normal growth behind their illness did far better, and, with those older, responded gratefully to treatment.

The one open-air ward then existing was the favorite place for nearly all, save certain cases of bronchitis and the very young. This experience paved the way for making open-air conditions possible in other wards as now.

Among the subjects of early special study and interest several may be mentioned.

The behavior of frank pneumonia in the open-air ward.

Reduction of fever by open-air exposure under circulatory stimulation by gentle massage.

The relation of edema in infants to causes other than renal and cardiac.

The discarding of tapping the ventricles of the brain in hydrocephalus.

The value of lumbar puncture and knowledge from fluid obtained.

The fortunate use of Flexner's serum.

The careful application of principles of surgical asepsis to prevent contagion between ward beds, some of which were occupied with bowel infections.

With the advance in acquaintance with the flora of the digestive tract, inhibition of fermentation by use of lactic acid bacilli was tried with some apparent confirmation of its value.

The uses and methods of producing better milk became familiar.

The therapeutic aid of vaccine in furunculosis sometimes failed by reason of the low vitality of the cases, apparent success following its use in bladder infection with the colon bacillus.

Tuberculin was used for diagnosis.

In the study of the Shiga bacillus the addition to knowledge did not avail for cure, in an early research made through the aid of the Rockefeller Institute.

Recent demands of the hospital season have centered increasingly upon care of the diarrheal diseases. Always prominent, they now exhaust most of the ward space.

The "cleaning up" of the newly received child, usually having a digestive tract laden with material furnishing food to all toxic conditions, has always been well done and has saved many lives.

To this end castor oil, calomel, salines and lavage have been put to every shade of use.

Intestinal antiseptics empirically tried became practically discarded.

Topical applications in the bowel were bismuth or opium in starch solutions, normal salines, and silver solutions weak, until the past season.

After the first treatment with usually quick improvement there was always one problem pressing. The same problem confronted every case of atrophy, of hereditary enfeeblement, of long-standing illness and of extreme infancy, — the problem of nutrition. Case after case could be brought to partial gain, temporarily holding its own. Then began a decline from lack of native vitality, or lack of ability to provide a food which could be assimilated by organs with diminished or undeveloped function. Infants having vitality remaining after being suspended as it were on sterile water supplied by the mouth, the bowel or through the skin during the period of elimination of toxins, lived. Infants without that inherent vitality were dying. The value of stimulants though recognised proved relatively small. This may be explained by the fatty degeneration of the heart muscle proved by histological examination in some of the cases.

To find or adapt some nutrient which could be accepted at an earlier moment without relapsing the patient was ever the search. Most carefully adapted percentage formulæ, with split proteid, or otherwise, cereal diluents, milk whole, fat-free or pancreatised, albumen solutions, wheys, decoction of tea and buttermilk, all had their successes and failures, mostly failures in the weakest cases.

It was evident that there were no rules of age or weight to accept unless based upon some data which further individualised the condition and need of the case.

The basis for this began to be laid through the systematic study of the infant stools, which interpreted, when understood, what nature might need by what she refused to do. Fuller revelation as to the digestion of fats, and proteids, the presence of pus, blood, and bacteria, belongs to the most recent seasons.

This knowledge with the application of principles of caloric need had little place in the skill and experience of the older times. Now it is supplemented by the excellence of the food laboratory. And there must be unalloyed satisfaction because a dream of the past has been made a fact of the present, namely, the finding of suitable sources and developing a method of transfer by means of trained nurses to provide extreme infancy and extreme weakness with human milk, with which, after all, no substitute can compare.

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THE promotion of the Kaiser to the honorary title of Doctor by the Prague medical faculty will take place soon in the throne room of the palace in Berlin. The rector of the Prague German University, the present dean of the medical faculty, Professor v. Jaksch and Professor Hering will come to Berlin to officiate. — *Jour. Am. Med. Asso.*

## II. BACILLARY DYSENTERY. ITS BACTERIOLOGY, BIOCHEMISTRY AND THEIR RELATION TO TREATMENT.*

BY ARTHUR I. KENDALL.

(From the Department of Preventive Medicine and Hygiene, Harvard Medical School, and the Boston Floating Hospital.)

THE discovery of the dysentery bacillus by Shiga, in Japan, and the work of Flexner and others in this country, marks a very important epoch in the history, etiology and treatment of dysentery not of amebic origin. The investigations of these workers have shown that a group of closely related organisms, whose morphological and biological characteristics are too well known to repeat here, are causative agents in producing the disease variously known as bacillary dysentery, infectious diarrhea, acute specific dysentery, epidemic diarrhea and other names.

Bacillary dysentery must be regarded as a serious disease, particularly in young children, and it is very desirable, both from the standpoint of the patient and the community, to be able to differentiate sharply between cases of true dysentery, caused by the dysentery bacillus, and cases of severe enterocolitis of unknown etiology, but in which the dysentery bacillus is absent. It is particularly important to make this distinction, since, as Stengel [1] has pointed out, "It is practically impossible to separate cases [of enterocolitis] due to ordinary causes from instances of epidemic diarrhea produced by *B. dysenteriæ* except by bacteriological methods."

Although this paper is not concerned with the clinical picture of bacillary dysentery, it will be necessary to refer briefly to what may be termed the "cardinal symptoms" of this disease as it is seen typically in young children in order to bring out certain facts supporting Stengel's statement that the symptomatic complex is not an infallible guide to the etiology of the disease.

The cardinal symptoms of bacillary dysentery are diarrhea, tenesmus, continued fever and prostration, with blood, mucus and usually pus in the stools.

There are mild cases of diarrhea which are of brief duration which yield more or less readily to treatment, and yet there may be considerable numbers of typical dysentery bacilli in the stools. These cases, not serious from the standpoint of the patient, may be a source of danger to other children, particularly if they be in the same wards, and it is unnecessary to dwell upon the ways and means through which infected material from babies harboring these unsuspected bacilli might be transferred to other babies already weakened by disease, thus spreading the infection.

In the past it has frequently been impossible to isolate dysentery bacilli from all cases which clinically are bacillary dysentery; that is to say, from all cases exhibiting the cardinal symptoms of this disease. This discrepancy has not infrequently amounted to 10 or even 15% of the cases. Investigators have attributed this lack of agreement between the clinical and bacteriological findings to imperfections in bacterial technic, and doubtless in many instances this supposition is correct. In a recent communication (Kendall and Smith) attention was called to the fact that there are cases which are clinically bacillary dysentery, while bacteriological examination has failed to reveal the presence of dysentery bacilli in the stools, or at least it was impossible to recover them in successive trials, while, on the contrary, gas bacilli (*Bact. Welchii*) could be very readily demonstrated. These cases are, therefore, apparently not to be regarded as instances of bacillary dysentery, but rather as belonging to the group of the so-called fermental diarrheas. This supposition is strengthened by the fact that these cases do badly upon the dysentery treatment and respond readily to sour milk therapy.

These points are mentioned to call attention to the fact that the clinical diagnosis should be corroborated by a thorough bacterial examination to insure accurate statistics. On the one hand, cases of diarrhea not presenting the cardinal symptoms may in reality be instances of bacillary dysentery, and, on the other hand, patients presenting a symptom complex indistinguishable from that of bacillary dysentery (particularly in the absence of a good clinical history) may not be cases of bacillary dysentery at all, but of a type of diarrhea in which the gas bacilli are present in relatively large numbers and in which this organism appears to play a prominent rôle.

Medical statistics of bacillary dysentery, therefore, are subject to correction unless they are based upon the findings both of the clinician and the bacteriologist. From the standpoint of the health authorities, the mild, unrecognised cases must be regarded as a problem to be taken into consideration in preventing the spread of the disease.

The dysentery bacilli appear to produce their harmful effects through the elaboration of toxins which recent investigators claim have specific affinities for the anterior horn ganglion cells and the epithelial cells of the intestinal mucosa. The Shiga type of organism produces a powerful extracellular toxin, while the Flexner type belongs to the group of the endotoxins. The poison of the latter appears to be less harmful than the former.

It should be stated that the numbers of dysentery bacilli which can be isolated from the feces of dysentery patients bear no constant relation to the severity of the disease; it is possible to obtain large numbers of typical bacilli from the dejecta of mild cases, and it is equally true that it is often difficult to isolate even a few organisms from the severe cases. Again, certain cases show signs of profound toxemia almost from the start, and die early in spite of the most persistent treatment, while other cases appear to be much less toxic and recover after a more or less protracted illness. It is impossible to predict *a priori* just how the dysenteric toxins will act upon a given patient, although the Shiga infections are more fatal than the Flexner types. The considerable differences in reaction to the toxins

* Read before The Massachusetts Medical Society, Jan. 4, 1911.
[1] Osler's Modern Medicine, v. p. 385.

of the dysentery bacilli should be borne in mind in discussing the efficiency of therapeutic measures, since it appears that certain cases are doomed from the time they are seen by the physician, although they may survive for a few days. It is not possible with our present knowledge to estimate the relative importance respectively of the individual idiosyncracy to the dysenteric toxins, the numbers of bacilli actually present and the virulence of these organisms.

Besides the dysentery bacilli, two other organisms are commonly represented in the intestinal flora of bacillary dysentery, at least as it was seen on the Floating Hospital this last summer, namely, *B. coli* and the *streptococcus*. This is by no means an original discovery; indeed, these organisms have been noted in cases of dysentery in association with the dysentery bacillus ever since the etiology of the disease has been established.

To make clear what is to follow concerning the diet of dysentery patients, it will be necessary to discuss in some detail certain important and hitherto neglected facts concerning the biology of bacteria in general, and of these organisms in particular.

In dysentery cases, particularly in infants and young children, the routine treatment has been to withhold all food for several days. This preliminary starvation, together with the numerous alvine discharges characteristic of dysentery, results in a very thorough cleaning out of the bowel so far as food is concerned. The patient, however, must keep up its vital functions, respiration, heart beat and so on, and the source of energy available for this purpose is, first of all, glycogen which is normally stored up in the liver. This glycogen, so physiologists tell us, is utilized in the body as dextrose, of which it is a polymer. Dextrose is normally present in the blood to the extent of about 0.2%. As soon as the dextrose and the reserve glycogen is used up, or at least reduced to a certain minimal amount, the body must draw upon some other source for the maintenance of the vital functions. The important point to remember in this connection is the fact that the dextrose (and its polymer glycogen) is the immediate source of energy, and while the supply lasts the breakdown of other nitrogenous substances is prevented to a very considerable extent; in other words, dextrose spares body nitrogen. Hence, prolonged starvation of dysentery cases (or other diseases) during the initial treatment of the disease results in the more or less complete disappearance of the sugar, and it is very probable that the loss of this protein-sparing action of dextrose is not without influence upon the well-being of the patient.

This protein-sparing action of sugar in preventing protein metabolism in the animal body is even more marked in the case of the bacteria, although the processes involved appear at first sight to be slightly different, and inasmuch as this fact — that carbohydrate prevents bacterial attack upon protein — is the very foundation upon which the work presented here rests, it will be essential to go into the matter in some detail. A few examples will make the problem clear.

Dr. Theobald Smith, in his admirable studies upon the production of toxin by the diphtheria bacillus, has shown that the amount of toxin produced depends to a very considerable degree upon the presence or absence of sugar in the medium in which the organisms are grown. If there is considerable utilisable sugar present, as much as the organisms can ferment, there will be little or no free toxin produced. The diphtheria bacilli attack the sugar in preference to the protein of the medium and only stop when the acidity formed as the result of their fermentative activities has reached such a degree that they can no longer develop. If there is a lesser amount of sugar present in the medium, so that the sugar is used up before the acidity becomes too great, diphtheria toxin begins to accumulate. This formation of free toxin, however, is minimal until the sugar is practically all fermented.

If, now, the diphtheria bacilli are inoculated into media of precisely the same composition as those mentioned above, except that the sugar be not more than 0.2% (this amount of sugar is added to start the organisms growing well), there will be a decided production of free toxin which reaches its maximum some time after the sugar is quite used up. It would appear from this experiment that the production of toxin and the fermentation of sugar are antagonistic processes at least to the extent that the bacteria attacked the fermentable sugar before breaking down the protein constituents of the media, although both are simultaneously present. In other words, *fermentation* (or the metabolism of sugars) *takes precedence over putrefaction* or toxin production (the break down of protein by bacterial activity).

When we remember that the bacterial toxins are produced, so far as we know at present, by the breakdown of protein substances by bacteria, the significance of the presence of carbohydrate becomes apparent. The bacteria utilise the carbohydrate in preference to the protein, and just so long as the carbohydrate is not used up, just so long will the protein be shielded from any considerable bacterial attack. It follows, therefore, that inasmuch as the toxins we have mentioned are the results of protein metabolism by bacterial agency, they will not be formed to any extent in the presence of carbohydrate which can be utilised by the the bacteria.

Dr. Smith tells me that the same principle holds for the tetanus bacillus; the production of toxin depends upon the action of the tetanus bacilli upon protein, and that this action does not take place to any extent until the carbohydrate of the medium is metabolised.

It is a fact that both in the case of the diphtheria and tetanus bacilli the production of powerful extracellular toxins is the salient feature of their importance to medicine, and it is equally true that, with one or two exceptions, the majority of bacteria known at the present time do not produce powerful poisons. It will now be necessary to discuss the influence of carbohydrate

and protein upon the metabolism of organisms not belonging to the toxin-producing class.

Before doing this, however, it will be well worth while to recapitulate what has been said in the last few paragraphs.

It was shown that bacteria acting respectively upon carbohydrate and protein produce from the former fermentative products and from the latter putrefactive substances. The fermentative process takes precedence over the putrefactive if both carbohydrate and protein are simultaneously present in the medium in which the bacteria are growing. The carbohydrate, in other words, is attacked and must be used up before the protein is acted upon to any extent, and in this sense the carbohydrate shields or spares the protein in a similar manner to that obtaining in the animal body where carbohydrate shields protein from metabolism. The products of protein putrefaction were seen to be strongly toxic in the cases of the diphtheria and tetanus bacilli; hence the addition of utilizable sugar to a protein medium suited for the development of these bacteria would be indicated if one wished to prevent or inhibit toxin production.

Turning now to a well-known organism of the intestinal tract which does not produce an extracellular toxin, *B. coli*, we will see if it also obeys the same general rule — utilising carbohydrate in preference to protein. The protocols of an actual experiment will illustrate the case exactly.

Two portions of regular nutrient bouillon, of precisely the same composition and reaction, with the exception that one contained 1% of dextrose, were inoculated with the same strain of *B. coli* and incubated at body temperature for about ten days, then examined bacteriologically and chemically. Bacteriological examination revealed the fact that the cultures were pure and contained no organisms other than the ones inoculated. Chemically, the results were very striking.

That portion of bouillon containing the dextrose had an agreeable odor, a decidedly acid reaction and contained, besides $CO_2$ and $H_2$, considerable amounts of lactic, acetic and succinic acids. No products of protein breakdown could be found, and the whole process was one of fermentation. The protein, with the exception of minimal amounts necessary to meet the nitrogen requirements of the bacteria, was apparently intact. This was, therefore, a typical fermentation.

The portion of bouillon containing the same amount and kind of protein as the first portion but without the dextrose was foul smelling and strongly alkaline in reaction. $NH_3$ and $H_2S$ were freely formed, and, in addition, the medium contained relatively large amounts of typical putrefactive products — indol, some skatol, aromatic oxy-acids and basic bodies. In this case, the protein was attacked and broken down by the colon bacilli and a perfectly typical putrefaction resulted.

It will be remembered that the fundamental conditions obtaining in these experiments were the same as those with the diphtheria and tetanus bacilli respectively. In one set of media sugar was present, and in a corresponding set the sugar was omitted. In all the cases cited, the same sparing or protective action of the carbohydrate for protein was noticed when sugar was present, and in those instances where the sugar was omitted the protein was vigorously attacked.

Recent investigations have shown that the toxin produced by the Shiga type of the dysentery bacillus is produced only in bouillon having a strongly alkaline reaction.[3]

This statement becomes significant when we remember that the reaction of pure fermentations is acid, while alkaline reactions occur in putrefactions, that is, where bacteria act in the absence of sugar on protein.

Further evidence of the generality of this law of fermentation taking precedence over putrefaction is not wanting. At first sight it might appear to be quite foreign to the subject in question to quote certain experiments made by Heilner. Heilner studied the effects of injecting certain sugars into experimental animals and he found that the sugar solutions do not become infected, or, more accurately, that the animals into which the sugars were injected did not develop abscesses at the site of inoculation. It is well-known that protein injections similarly made not infrequently do become infected. Even allowing for the difference in rate of absorption of the sugar and protein respectively, one cannot but be impressed with the remarkable difference in behavior between the two classes of substances, and that the explanation, in part at least, is associated with the innocuous products formed from the metabolism of sugars as compared with the more or less toxic substances derived from bacterial decomposition of proteins. The writer believes that the putrefactive products formed from infected protein injections are of real value to the invading organisms, assisting in their fight to gain and maintain a foothold in the animal body, while the relatively benign fermentative products are of little value to the invading organisms under similar conditions. Many other illustrations also of an apparently unrelated nature might be cited in which the explanation in reality appears to depend upon the same phenomenon, but enough has been said to illustrate the fundamental principles which are taken advantage of in combatting the dysentery bacilli in the human host, namely, that bacteria can, generally speaking, act upon certain sugars (the kinds of sugar vary with different kinds of bacteria) and upon certain kinds of protein, and also that in the presence of both utilisable sugar and utilisable protein, fermentation takes precedence over putrefaction. Inasmuch as the putrefaction products, not the fermentative products, are the harmful substances, it follows that in order to prevent the formation of harmful (toxic) substances by bacterial action, one should

[3] Kolle und Hetsch: "Die Giftbildung im Bouillon erfolgt nur bei stark alkalischer Reaktion des Substrates." p. 250.

produce conditions favorable for fermentation, namely, to present the organisms with utilizable carbohydrate.

Returning now to the associated flora of bacillary dysentery, it was stated that these three organisms are commonly present: the dysentery bacillus (Flexner and Shiga types, or both), *B. coli* and the streptococcus. It was also stated that there is little or no food in the alimentary canal, other than the intestinal secretions, because the repeated evacuations have cleaned the tract out. The residual bacteria are living chiefly upon the intestinal secretions, and possibly the mucus, since food is withheld from the patient. The available sugar is exhausted, and the organisms are forced to derive their nutriment chiefly from albuminous substances. It was shown that bacteria acting upon protein (nitrogenous substances) in the absence of fermentable carbohydrate form putrefactive products, some of which may be very toxic. It must be evident, then, that the dysenteric flora, under the conditions outlined, is essentially putrefactive in character. The dysentery bacilli are forming toxins, which are extracellular in the case of the Shiga type, intracellular in the Flexner variety, and *B. coli* is producing substances such as indol, skatol and aromatic bodies. These latter products are, according to authentic observations, absorbed in part at least from the alimentary canal, paired in the liver and excreted through the kidneys. The patient, therefore, in receiving no food, is being poisoned by the bacterial products elaborated in the intestinal tract, and attempting to detoxicate and excrete these substances in addition to maintaining the normal vital functions of respiration, heart beat and so on.

Realizing these conditions, the writer has proposed feeding such patients from the start with carbohydrate. The principle involved is a twofold one: to furnish an easily assimilable and readily fermentable carbohydrate to change the character of the bacterial activity in the alimentary canal from the proteolytic to the fermentative type, and to furnish nourishment to the patient.

Changing the metabolism of the dysentery and colon bacilli is an important procedure, since these organisms, in utilizing sugar, are not acting upon protein. The result is that the toxin formation by those dysentery bacilli developing in the lumen of the intestines is inhibited, since the organisms become fermentative, while the colon bacilli and the streptococci form lactic and other acids instead of putrefactive products. These latter organisms, *B. coli* and the streptococcus, become antagonists of the dysentery bacilli, since the dysentery bacilli are sensitive to even relatively small amounts of acid, while, coincidently, the dysentery bacillus itself tends to become a harmless acid-forming organism in place of being a toxin-producing bacillus. This leaves the host relatively free to combat the toxin already absorbed, but reduces or prevents further insult in this direction. This procedure, then, is theoretically logical, and experience has shown that it is practically possible.

The patient is benefited in two ways: by a diminished absorption of products of protein decomposition, and by the ingestion of a readily assimilable food. The sugar employed for this purpose was lactose. At first sight it might appear that almost any sugar would be equally efficient, but experience has shown that lactose is a most easily assimilated sugar, and it is, of course, the normal sugar for babies. Furthermore, the flora developing on this sugar is particularly favorable for the patient, which is not the case with certain other sugars.

Lactose is easily and simply broken down in the alimentary canal into dextrose and galactose, and the absorption of these simple sugars is accomplished with a minimal expenditure of energy. It is worth while to contrast this very simple hydrolytic cleavage with the extremely complicated series of events attending the digestion and assimilation of protein, particularly in those cases in which the digestion is seriously upset. The difference in expenditure of energy necessary and sufficient to digest a protein and a carbohydrate such as lactose must be a factor of importance in dangerously sick patients, whose strength is already largely used up.

It has been claimed that the dysentery bacilli penetrate the intestinal mucosa, and may go as far as the mesenteric lymph nodes, and at first sight it would seem that these organisms might be beyond the reach of carbohydrate. Doubtless this is so to a considerable degree. If, however, the attempt be made to restore to normal the dextrose of the blood, it is not inconceivable that the invading bacilli even in the tissues may be reached, and with this idea in mind the expedient of infusing dextrose was tried. The sugar employed for this purpose must be absolutely chemically pure, and Kahlbaum's seems to be the only brand available for this purpose. In addition, then, to the sugar that is penetrating the intestinal mucosa as the result of feeding lactose, it is possible to add to the tissues of the body another portion of sugar through the medium of the blood stream, into which the sugar is absorbed after the infusion.

The amount of dextrose to be infused is easily calculated: a 10% solution of dextrose is isotonic with the blood, and the blood is approximately one thirteenth the weight of the body. Normally there is about 0.2% of dextrose in the blood.

It might be asked: Why not feed dextrose, or maltose, which is a condensation of two molecules of dextrose? The lactose is preferable partly because it is the normal sugar of animals and man, but chiefly because but few organisms except those normal to the intestinal tract can utilise it before it is broken down by hydrolysis. Certain well-known bacteria, for example, *B. acidophilus*, develop rapidly in dextrose, less so in lactose; while these acidoduric bacteria are desirable in small numbers, it would be unwise to encourage their unrestrained growth in the

intestinal tracts of patients fed largely upon sugar for some time for fear of causing excoriations which would almost certainly occur in consequence of the large amounts of lactic acid which these organisms generate. Again, as the writer has pointed out before, there is greater danger of arousing a condition of sugar intolerance if the acidoduric bacteria gain the upper hand.

The procedure outlined above is directed toward the bacteria themselves, and its purpose is to *prevent the formation* of toxic substances rather than to attempt to neutralize them after they have been absorbed by the host. Taking advantage of the fact that bacteria will not attack protein in the presence of easily fermentable sugar, lactose is intentionally fed to the host in order that the bacteria which he harbors will produce acids instead of toxins and putrefactive substances. This lactose also furnishes a readily assimilable food for the host.

While it is not possible to present the full bacterial protocols pertaining to this work at this meeting (they will appear in detail in another communication), they may be summarized in a few words. The characteristic flora of bacillary dysentery, as seen in Boston during the last summer, consists of three organisms, essentially: *B. dysenteriæ* (Flexner, Shiga or both types), *B. coli* and the streptococcus. Under the influence of a lactose diet, the streptococci tend to disappear, a point of the greatest importance, since these organisms frequently cause death in these cases as a terminal infection. The colon bacilli become reduced in numbers and fermentative in place of putrefactive. The dysentery bacilli also tend to disappear. After a few days, longer in some cases, shorter in others, the character of the intestinal flora undergoes a profound change. Gradually Gram-positive bacteria, similar culturally and morphologically to those characteristic of the dejections of normal nurslings, appear in the stools, while the Gram-negative bacilli (dysentery bacilli and colon bacilli) diminish in numbers.

It is interesting to note that this change in the fecal flora, while frequently an indication of recovery, is not always so. The latter cases, which terminate fatally as a rule, appear to be those in which the patient succumbs to the toxemia, as mentioned above. These patients appear to be doomed from the start. It is also possible, as was shown by the summer's experience, to bring about this unfavorable retrogression in the type of the fecal flora by the use of certain foods after the acute symptoms have apparently abated. Very frequently one notices in such cases during the last day or two of life a rather abrupt return of the Gram-negative bacteria, streptococci, *B. coli* and *B. dysenteriæ* associated with a retrogression of the Gram-positive normal intestinal bacteria.

It is very probable that the principles outlined above could be successfully utilized in other bacterial infections of the intestinal tract, particularly in typhoid fever. Typhoid fever is usually a disease of individuals older than those studied in the series of experiments recorded here, and the diet could, consequently, be more varied. With, however, certain modifications which readily suggest themselves, the use of lactose in this disease should theoretically prove helpful.

In Bright's disease, as is well known, milk or buttermilk is strongly advocated in many instances. So far as the writer is aware, this treatment is largely empirical, but it is very possible that in certain cases at least the beneficial results which have been attained are to a certain degree explainable on the basis of the facts outlined above. The character of the food (milk) is such as to encourage a fermentative flora in place of a proteolytic flora. The fermentative organisms would develop rapidly and tend to replace the putrefactive organisms which might be present. In addition, the putrefactive bacteria would tend to become fermentative in their metabolism as well. The natural result would be a saving to the host in the following manner: The liver and kidneys would not have respectively to detoxicate and to excrete the putrefactive products which previously were probably present. If one or both of these organs were weakened, this saving would mean a great deal in the course of the disease. This statement is not to be taken to mean that the cause, either directly or indirectly, of Bright's disease is the excretion of putrefactive products, but merely to call attention to the fact that it is possible that the diet frequently employed in these cases is such as to protect these organs from extra work in detoxicating and excreting putrefactive products.

Certain drawbacks might be predicted for this method of feeding dysentery patients, and they naturally group themselves under three heads: glycosuria, intolerance of sugar and excoriations.

Of the thirty or more cases studied, and in which lactose was administered, little or no intolerance was noticed. Indeed, the use of lactose actually made it possible to administer considerable amounts of fluid without resorting to saline infusions.

With the exception of two cases, glycosuria was not detected. In these instances, it appears that the excess of sugar was eliminated through the kidneys, when the condition promptly ceased.

Severe excoriations did not occur, and only in one or two cases was it possible to demonstrate slight reddening of the buttocks. The babies in which this reddening occurred had been on a pure lactose diet for more than two weeks before the symptoms appeared, and they did not progress to real excoriations. There were no signs of discomfort.

These facts are interesting and noteworthy. One would expect *à priori* to see at least moderate symptoms following the continued use of such a monotonous diet; it may be stated that the lactose, even when fed alone for many days, did not cause any demonstrable harm.

It must be apparent that the procedure outlined above is by no means intended to be a

complete treatment in itself. It is to be regarded, however, as an important initial factor in combatting the disease and in assisting the patient to keep in check the development of a harmful flora, while the clinician administers an appropriate supportive treatment.

In one respect, this work is incomplete. After feeding lactose during the early days of the attack, the problem is, What to feed next? It may be stated that while the writer is not prepared to make any definite statements regarding the after feeding of bacillary dysentery, the use of cow's milk, either diluted or skimmed, is distinctly harmful unless its lactose content is considerably increased. This agrees with the observations of many other observers. Milk, even after convalescence is well established, should be used with the greatest caution.

From purely theoretical considerations, whey or certain cereals would appear to be the most satisfactory foods to give after the lactose, since in these products there is a relatively small amount of nitrogen and an excess of carbohydrate. This excess of carbohydrate is essential to protect the nitrogen from bacterial attack and thus precipitate another relapse.

In any event, it is desirable to give the patient a small amount of nitrogen, which is easily assimilable, as soon as possible, but further increments of nitrogen should be added to the diet with the greatest caution.

This idea of changing the metabolism of invading pathogenic bacteria is, so far as the writer is aware, a new one and hitherto untried for this purpose.

The use of lactose is, of course, not new; indeed, it would be difficult to find any common foodstuff which has not at one time or another been tried in various ways. The writer believes, however, that the early employment of lactose for a definite purpose is novel.

In common with all new procedures and methods, some time must elapse and many trials must be made before the most advantageous use of it can be brought out. Without doubt, experience will indicate improvements and additions which can be advantageously introduced, but the fundamental principles underlying this work appear to be sound, bacterially, and it remains to utilize them to the fullest possible degree.

To summarize:

1. The patient is first given a dose of castor oil or other cathartic to clean out the intestinal tract thoroughly.

2. All food except sterile water is withheld for twelve to fifteen hours to facilitate this cleaning out.

3. Lactose, 5% solution in sterile water, is then fed by mouth for several days, until the acute symptoms abate, or until it becomes apparent that the patient requires some nitrogenous food.

4. Whatever nitrogenous food is selected must be fed cautiously, in small amounts, simultaneously with an excess of utilizable carbohydrate to protect it from bacterial attack.

5. The lactose should be fed in rather small amounts, often repeated to keep up a stream of this sugar in the alimentary canal, otherwise the proteolytes will be able to attack whatever nitrogenous substances may be present in the alimentary canal between the doses of lactose.

6. Dextrose (Kahlbaum's) may be infused, preferably as a 2.5% solution in physiological salt solution to bring to normal the dextrose content of the blood and to furnish fluid to the patient.

7. This feeding of lactose is intended to accomplish a twofold purpose: to furnish to the host a readily assimilable food, requiring a minimal expenditure of energy to metabolize it, and to change the character of the metabolism of the dysenteric flora from the proteolytic to the fermentative type. This change in the type of the intestinal flora is particularly desirable to prevent further intoxication of the host and to give him a better chance to combat the poisons already absorbed.

Upon looking over the summer's work it is apparent that certain mistakes were made, and while these mistakes are deplored, they are not wholly in vain, since they furnish the most reliable method for determining the efficiency of this method of procedure. Of these errors, two stand out prominently:

1. Dextrose was not used soon enough in the majority of cases. Dextrose infusions should be given at the very start, while the patient is undergoing the initial starvation. By so doing the patient is provided with a most readily utilizable food which spares body nitrogen without the slightest expenditure of digestive energy.

2. Lactose also should be fed within twenty-four hours, and if possible within eighteen hours. The longer the carbohydrate is withheld, the longer the dysentery bacilli have a free field to produce toxins.

Finally, in discussing the efficiency of these sugars, two facts should be borne in mind. Lactose (and dextrose) is not in itself a complete treatment, and cannot of itself be expected to save the lives of patients. It is intended to prevent, as far as possible, the production of bacterial toxins in the intestinal tract, to encourage the growth of a more favorable intestinal flora which shall be antagonistic to the putrefactive dysenteric flora, and to furnish a readily assimilable food for the patient during the acute stages of the disease.

If the patient is already overwhelmed with toxins, lactose or any other substance except a specific antitoxin or serum cannot be expected to save the case.

Again, it is perfectly apparent that lactose, or any carbohydrate, cannot be fed for too long an interval without harmful effects, although these harmful effects will, in the majority of cases, be of less consequence than the withholding of all food, or the feeding of purely nitrogenous foods. The after-feeding will determine the fate of the patient in most instances, and this after-feeding, in virtue of the favorable start made by

the lactose, should carry the patient to recovery in the majority of cases.

In conclusion, the writer desires to express his indebtedness to the management of the Boston Floating Hospital staff, the visiting staff, the house officers and the nurses who have co-operated with him in this work.

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## III. INFECTIOUS DIARRHEA. ITS TREATMENT WITH ESPECIAL REFERENCE TO THE BIOCHEMICAL AND BACTERIOLOGICAL STANDPOINT.

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INFECTIOUS diarrhea, i. e., bacillary dysentery, is a menace to all young life and needs all the help we can give in attempting the solution of its prevention and diagnosis and improving its inadequate treatment. A general paper on this type of intestinal infection is not my aim in this communication. A résumé, however, of the clinical aspect of infectious diarrhea will not be out of order to establish at the outset as clear a mental picture of the disease as is possible.

We are dealing with a specific disease which usually appears in infancy and early childhood. It belongs to the general group of dysenteries and depends on bacterial infection of the intestinal mucous membrane and invasion of toxins with their accompanying nervous phenomena. Attacking as it does the ileum and lower bowel, this disease produces pathological inflammatory changes which post-mortem appear as thickened, congested, ulcerated and pseudo-membranous conditions.

Intestinal irritation with its subsequent increase of peristalsis appears early in the disease and gives us usually a typical clinical history and actual appearance of bloody, dysenteric movements. The dehydration of the system through diarrhea, the irritable conditions of the stomach as shown by vomiting, together with the pain subsequent to peristalsis and tenesmus, and the increased hypersensitiveness of the central nervous system, induced by toxemia, all make a disease rightly to be feared during the warm summer months.

### ETIOLOGY.

*Primary factors.* — The all-important etiological factor has been known for a number of years to be dependent on a specific organism. Shiga in Japan, Strong, Flexner and Hiss have clearly demonstrated this disease to be dependent on a bacterial group. The group of organisms varies apparently according to seasons and countries largely. The bacillus dysenteriæ of Shiga is rarely found among infants outside of eastern countries, while the predominating bacteria in the movements with us are those described by Flexner.

The presence of these organisms has been seen in breast-fed and bottle-fed children, varying in effect from a mild form of indigestion to severe forms of ileocolitis. The finding of such bacteria does not necessarily lead to a clinical diagnosis of infectious diarrhea or bacillary dysentery, but should give us a possible means of preventing the spread of this sickness through carriers.

*Exciting factors.* — While predominant during the summer months, infectious diarrhea does occur at other seasons. Important among such exciting factors are bad hygenic conditions. Such cases are far more numerous among the poor of crowded districts in which filth and lack of air and sunlight prevail. The nutrition of children, while playing a part in the morbidity of this disease, plays more of a part in its mortality. Good nourishment does not necessarily protect a child; it merely gives the patient more resistance against the infection.

Previous illnesses, we know from experience, play a not unimportant part; among these are general debilitating diseases, measles, whooping cough, etc., so frequent in early life. Far more important are digestion upsets. The more direct exciting causes are found in the foods, climate and weather.

The effect of climate is most marked in low humid countries where rapid changes in temperature and humidity predominate. These climatic conditions naturally affect all animal life, the child and its food. It lowers the resistance of the former and increases the destructibility of the latter.

*Symptomatology.* — From the intestinal infection and toxic nature of this disease a fairly characteristic clinical picture usually presents itself. The onset of intestinal disturbance is not usually sudden, but may extend over a period of a few days. When sudden in appearance, all other symptoms are correspondingly increased. There is moderate fever, on the average of 101. The pulse and respiration are not much accelerated unless the patient is overwhelmed. The child's mental condition is often bright. There may or may not have been vomiting. The child frequently does not look sick, and the abdomen may show no signs of tenderness or other abnormality. The temperature varies in its height and duration according to the infection and other complications.

The central nervous system is usually dulled. Apathy appears, while restlessness and fretfulness are seen in the severe cases. Convulsions rarely occur, but signs of meningeal irritation, twitchings, spasms, retraction of the neck, etc., are found. The facies are those of prostration (sunken eyes, half closed lids and dry lips). The heart action is usually regular, unless the patient is profoundly sick, when irregularities as to rhythm and qualities of sound are apt to appear. The abdomen, under normal conditions full and not sensitive, is found retracted and tender and usually dull upon percussion. The extremities, which normally are warm and of good color, in profound cases become cold and cyanotic. The reflexes are naturally retarded and hard to obtain in severe cases.

The movements are frequent, may be small or large, peculiarly acrid in odor, liquid, and always contain mucus and blood and pus in greater or less degree. The amount of pus or blood is no true guide to the severity of infection nor to the intestinal pathological changes. Tenesmus is a frequent and distressing symptom.

The *diagnosis* of bacillary dysentery is usually easy. In the majority of cases the movements are characteristic, and the patients present more or less typical pictures. The presence of the dysenteric organism, proven by bacterial examination, is, however, the only absolute means of settling the question, as blood not infrequently is seen in what are known as fermental diarrhea, whereas dysenteric organisms can be demonstrated in cases of apparent mild indigestion. The agglutination reaction of serum is not constant during the early days, while leucocytosis does not exist except in complicated cases.

*Course.* — The course of the disease depends primarily on the virulence of the infecting organism, the resistance of the patient, climatic condition, and proper treatment. Being a more or less acute infection, radical measures are indicated. Its course is short, usually about one week. Subsequent complications dependent on intestinal, circulatory and nervous disturbances prolong the convalescence usually several weeks.

*The prognosis*, judging from reports in various centers, differs considerably. As a rule, 25% to 35% of cases are fatal under the present known forms of treatment during hot weather. Considering the age of the patient usually attacked, and the virulence of the affecting bacteria, and that the vital organ of digestion is invaded, the prognosis must necessarily be very guarded.

*Treatment.* — With the diagnosis of this disease established, its treatment becomes the all-important and interesting problem. In view of the fact that even under the best hands a serum or vaccine for this disease has not yet been found, treatment must still remain largely symptomatic. Up to the present we have carried it on in a more or less empirical manner.

Recent bacteriological studies of the biology and chemistry of intestinal flora through such work as that of Kendall led to our changing the treatment on the Floating Hospital last summer. To the results of our experience, as a preliminary report only, I wish to devote most of my time.

After the initial laxative all agree upon the plan of a temporary withdrawal of foods. The idea apparently underlying this is that after cleaning the intestinal tract, we attempt to starve the bacteria and at the same time give the digestion a chance to recover. Food is generally withheld for a period of from two to ten days, while water is forced by ingestion and hypodermoclysis, for the organism can exist temporarily without food, but needs water on account of the fluids of the tissues being drained from diarrhea and vomiting. Through Flexner's work, dysenteric organisms were found to live on mucous and intestinal secretions, one or both, and thus might become parasites to the patient in spite of entire absence of food. At the same time other organisms, especially the colon group, are found to multiply tremendously. Theoretically and experimentally, these organisms (the colon group) in the presence of sugar have been found to prevent putrefactive products and decomposition.

These bacterial evidences led to the conception of a very early administration of sugar. In the first place, such treatment would alter the bacterial flora; would furnish, in the second place, a form of food that does not putrify and is most easily assimilable by an already impaired digestion.

The following report of the treatment is offered as clinical evidence of bacteriological and biological study of the movements of certain children in the wards of the Boston Floating Hospital during the summer of 1910. This report comprises 39 cases of children from three to sixteen months of age. They were not taken "*in serium*," but were chosen where some hope of life and chance for study existed. Of these, practically 50% died (19). The duration of disease on admission varied from one to sixty days (an average of twelve) in the fatal cases; of those who recovered, from one to twenty-eight days (an average of eight days). For sake of comparison I shall contrast the two groups, those who recovered and those who died.

Treatment divided itself into: I. The initial attack on the specific organisms and their resultant symptoms. II. The treatment of supplementary symptoms and supportive treatment.

I. INITIAL ATTACK ON THE SPECIFIC ORGANISMS.

*Catharsis.* — From the general character of this disease attacking the digestive apparatus, the first important treatment is to purge the digestive tract and theoretically rid the patient of infecting organisms and their products. Naturally this should follow immediately on the first signs of increased peristalsis and indigestion. Medicines used as laxatives are practically limited to three, — castor oil, calomel and sodium sulphate. Castor oil is the one in general use. It is usually well borne and is contra-indicated where vomiting exists. It is given in doses of from two to four teaspoons. Calomel is administered in divided doses of 1-10 gr. until 1 gr. is given. Sodium sulphate is given in various clinics with apparently good results where nausea and vomiting are complications. Prostration and general poor condition almost never contra-indicate initial cathartic. Of our cases all received castor oil, the majority ½ oz. In no case was there any untoward condition noticed.

*Local gastro-intestinal treatment.* — In view of intestinal infection, peristalsis should not be stopped, being the natural effort of the organism to rid itself of the irritating poisonous substances. Local colonic irrigations help this effort in soothing the mucous membrane and mechanically removing the intestinal contents. Nausea and vomiting, the other distressing symptoms, are treated best by bland liquids, lavage and drugs, according to the individual case. Local gastro-intestinal treatment divides its colonic treatment into

irrigations and rectal enemas. Colonic irrigations are contra-indicated only where profound prostration exists. They should be carefully attempted and should be stopped when resultant shock occurs or insufficient return of mucus or blood appears in the water.

*Irrigations* vary according to the material used. The usual solution is *normal saline* (one teaspoon of salt to a pint of water is a good substitute). Stimulating irrigations are given with the addition of silver nitrate 1 to 3% and rarely tannic acid. Previously not more than two irrigations a day have been considered wise. More frequent use is justly criticised as being of little avail in the presence of the frequent movements, and usually adds irritation and loss of strength to the patient. The quantity should never be less than 2 quarts. Clear return washings are the desired result. The temperature varies according to the desired effect — cool irrigations below 98° for elevated temperatures and 102° for subnormal temperatures.

Of the cases under consideration, 18 out of 20 of those discharged well received irrigations. Twelve had one and 6 received two a day for the first two weeks of their stay. Eight were prostrated, with marked temperatures above 101. Of the 19 children discharged dead, 13 received salines not more than once a day. Six received none, being too prostrated. All were seriously sick, with temperatures ranging from 102 to 103. The movements were not increased in number, nor was trauma apparent with increase of blood or pus. Slight to moderate prolapse of the rectum not infrequently occurred, which responded to careful manipulations and painstaking irrigations.

*Silver nitrate* irrigations were administered to 11 of those discharged well and 5 of those discharged dead. They varied in number from one to four during the first two weeks. A 2% to 3% solution was used, the total quantity being one pint and was preceded by a cleansing enema. Repeated irrigations were given in five instances, allowing two to four days' intervals. Three only of the 16 so treated showed any noticeable improvement. These were among the children who were treated with more than two irrigations. The value of such treatment is of doubt. An occasional case apparently seems to do well. What kind of case, strength of solution, proper interval between treatment are questions to be dealt with in an especial investigation.

*Lactose* and *dextrose* were added to irrigations and were also used in enemas for the first time during the season of 1910. Theoretically such treatment might help in changing the flora of the intestine and possibly prevent putrefaction. Absorption of such it was thought might give some nourishment. Lactose was added to the saline solution from 2 to 5% and dextrose from 2% to 4%. In all, 10 received lactose irrigations. While the large majority (8) were of those that recovered, no distinct benefit was manifest nor untoward effect noticed in a general way or in a local intestinal manner. Fifteen cases out of 39 received dextrose enemas for an average of eight days. On comparing those receiving dextrose and those who did not, it can be said that the days of rectal treatment were diminished by an average of four. No intestinal disturbance was perceived nor any marked improvement in the movements seen. Prostrated cases were not upset by this treatment. The retention of such enemas, always difficult at this age, was fairly good in the majority of cases. Sugar was at no time demonstrable in the urine. Such new intestinal supportive and bacterio-chemical treatment, it seems fair to state, added no positive form of helpful treatment. Our cases are too few and the treatment too new to arrive at definite conclusions. Further work may give us more hopeful results.

*Lavage.* — This procedure, while indicated in those nauseated and vomiting, was rarely practiced. Such symptoms seemed to respond to the simple means of gastric sedatives.

*Alimentation.* — Following catharsis and local rectal treatment comes this all-important question of liquids and nourishment by mouth. Temporary abstinence from all nutrition is imperative. This period lasts theoretically until the infection has subsided, temperature has fallen and the nervous irritability of the gastro-intestinal tract has improved. Experience alone can tell whether or no the digestion is ready for food. The longest period of abstinence from milk has been about two weeks. During this time ingestion of water is necessary to keep the fluids of the body and blood as normal as possible. *Boiled water* amounting to the quantity of food usually ingested is given by mouth. This at times must be forced by spoon, medicine-dropper or esophageal tube. The use of such measures should be guided by the condition of the child. From 24 to 32 os. are found to be the average necessity. Boiled water alone is generally not well taken, which is more true in prostrated children, especially when given by bottle. Where small amounts are given, infusions are of some assistance in keeping up the total twenty-four-hour amount. Food when first given is in the form of lactose added to the water. With us in previous years this form of food has been given, on an average, at the end of five days. Cereal waters and jellies have been added which are gradually replaced, according to the case, by digestible forms of milk and milk products (whey, buttermilk, fat-free milk, whole milk and cream whey mixtures). Lime water and alkalies have been added according to the digestion. (Twenty per cent of the milk and cream to allow partial digestion and 50% to exclude gastric digestion.) The length of time for administration of any food or its increase has never, and probably never will be, settled. Where rapid changes have occurred, digestion invariably has become upset. The choice of various milks and their products has been hard. Experience with the character of the movements and general condition have been the main guides.

Bacteriological examination of the movements at intervals may in the future give us some help. Theoretically, the infecting organisms of dysentery and their associated colon groups were thought

to be affected by the administration of lactose, which could form, through the action of the coli organisms, an acid media detrimental to the growth of the Flexner and Shiga bacteria and fight putrefaction. This was found to be the truth. The dysenteric organisms lost their staining properties and disappeared rapidly, while the general bacterial flora was consistently improved.

Of the 39 children herein reported, all received sterile water for not more than three days (an average of two), in contrast to the usual prolonged starvation. After this short interval they received 5% lactose. Of the 20 discharged well and the 19 who died, 14 and 10 respectively (58%) received lactose up to 5% for an average of eight days. Seven of these died during this treatment. The temperatures fell in 17 and remained stationary or increased in 7. The movements diminished in 13 and increased in 11. Blood was increased in 17 and diminished in 5. Of those who recovered, an average of 24 oz. of sterile water was well taken, while barely 16 oz. was ingested by those who died. Lactose solution (5%) administered for an average of eight days was readily taken by all to an average quantity of 36 oz. Of the remaining 15, 2 died before lactose administration was given. Six received whey (an average of 40 oz. in six days), while the remaining 7 got various foods and subsequently died.

*Subsequent food.* — Seven of the 20 who recovered received at first dilutions of sterilized fat-free milk, strengthened slowly to whole milk; 3 got whey at first, later straight dilutions of milk; 5 buttermilk and 3 straight dilutions of sterilised milk to whole milk. Of the 10 fatal cases that lived through lactose administration no definite result in regard to food can be stated. The majority succumbed to the too early administration of milk or too rapid change of nourishment. The reason for the too early giving of food was the necessity for some nitrogenous nourishment to sustain life.

*Toxic treatment.* — Toxemia, apparent by fever, cold extremities, depressed and at times irritated central nervous system, is fought largely symptomatically. Fever is best kept in bounds by hydropathic means (cool irrigations, packs and baths), while appropriate stimulation for the heart and respiration is administered.

Following the initial treatment comes that of the supplementary treatment. Catharsis is rarely needed a second time except where reinfection occurs. Local gastro-intestinal treatment (colonic irrigation, etc.) is used where symptoms prevail. The main difficulty lies in supporting the child by the appropriate administration of foods and supplying sufficient liquids for the needs of the body.

II. SUPPORTIVE AND STIMULATIVE TREATMENT.

*Supportive treatment.* — The loss of fluids in toxemia resulting from this intestinal infection frequently calls for the hypodermic injection of fluids and medicines as well as the ingestion of stimulants.

Hypodermic injection of the fluids is divided into those given to increase liquid intake (normal salt solution) and salines combined with food and other stimulants.

*Saline infusions* are necessary where ingestion of liquids is impossible or contra-indicated. Indications for such administration are emergencies where prostration, emaciation and rapid loss of fluids are apparent. Another indication is when insufficient liquids are ingested. Such infusions are given at blood temperature, usually under the skin of the abdomen (most convenient), but they can be given subpectorally. *Infusions combined with foods* (dextrose) were considered to increase nourishment. The dextrose used was chemically pure, most essential, to prevent poisoning. It was given in normal saline solution in the strength of 2½%. Of the saline infusions, 12 received from 8 to 20 oz. a day at irregular intervals; 8 of these died and 4 lived. Of the dextrose infusions, 9 patients received such treatment, 5 died and 4 lived. Three to four ounces was the total amount given at a time. The dextrose infusions seemed to stimulate the child far better than the salines and in 3 cases apparently saved life. The administration of such infusions must be checked by urinalysis, and with the appearance of sugar in the urine must cease. One or two such cases were seen.

*Stimulants.* — The stimulants with us were largely given hypodermically. Brandy was very seldom used. Strychnine from 1-250 to 1-500 gr. was given where cardiac failure was imminent (irregular and weak pulse). Camphorated oil and caffein were instituted for the first time but no marked improvement over general knowledge and treatment previous to other years was obtained.

Such as our experience was in dealing with so few patients little can be learned, but as every little helps, for so much is our experience of value. We have definitely found, as we rightly conjectured, that lactose in solution can be given earlier than was formerly considered. Under these conditions it certainly helps ingestion of liquids. We feel that it has a beneficial effect on dejecta spite the fact that this was not born out in the histories. Lactose and dextrose in the irrigations gave no demonstrable therapeutic value. Dextrose infusions were certainly an improvement. While this bacteriological study of movements in connection with bacillary dysentery has not added materially to our knowledge of treatment, it has explained the "whys and wherefores" of our old empirical treatment. In closing may I offer a word of warning. Let us not draw hard and fast conclusions from so new and interesting procedures. What little advances have been made through last year's work should and have born fruit, thus giving us stimulation for further work.

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THE HARBEN LECTURES. — Dr. Simon Flexner, of the Rockefeller Institute for Medical Research, New York, will deliver the Harben Lectures of the Royal Institute of Public Health of London for 1912. — *Med. Rec.*

## IV. SILVER NITRATE IRRIGATIONS IN THE TREATMENT OF INFECTIOUS DIARRHEA IN INFANTS.*

BY RICHARD M. SMITH, M.D., BOSTON.

VARIOUS astringents have been advocated for the local treatment of the intestine of infants ill with infectious diarrhea. The majority of these astringents have proved entirely useless and the remainder of them are of so little or so inconstant value that they are seldom employed. Weak solutions of silver nitrate have not proved to be better than solutions of other drugs. In the treatment of dysentery in adults, stronger solutions of silver nitrate have been used with apparent success. Hewes has recently published his results from the use of 5% silver nitrate solution. It seems reasonable to expect that, if the ulcers in the intestine can be reached by a sufficiently strong solution of silver nitrate, healing will be hastened, for ulcers elsewhere in the body respond to treatment of a similar nature. Of course only a portion of the ulcers in the intestine are situated near enough the rectum so that they can be reached by substances introduced from below. This, however, does not prevent the treatment of those ulcers which are within reach of rectal irrigation. It is also to be realized that the disease, infectious diarrhea, is more than a local condition of the intestine and that the healing of the ulcers may not mean the recovery of the patient, but certainly no one would fail to use a means of therapy because it did not cure the entire desease, provided some benefit was derived from its use, and no injury was done.

During the last season at the Boston Floating Hospital colon irrigations of 3% silver nitrate were employed in the treatment of infants ill with infectious diarrhea. The technic of the irrigation does not differ essentially from that of ordinary colon irrigations. It is advisable, however, to clean the rectum, and as much of the colon as possible, before using the silver nitrate solution. A cleansing irrigation with sterile water is given and continued until the water comes back clear. Salt solution should not be used for this preliminary cleansing, since the sodium chloride forms with the silver nitrate an insoluble silver salt which is precipitated and the strength of the silver solution is weakened. When the cleansing has been completed, one pint of a 3% silver nitrate solution is allowed to run into the colon and the tube then withdrawn. Some of the solution will be expelled, but no attempt is made to recover the entire amount used. In adults there is considerable pain after the injection, but none of our patients showed any marked evidence of discomfort. Should such discomfort be present, it is easily controlled by an opium suppository. The process may be repeated on the next day, or the next day but one. I do not know how many injections may be given without harm, but, in my experience, if no benefit is derived from three injections, no favorable result is likely to follow further use of this means of treatment.

For the first few hours following a treatment the movements are usually worse than before — more frequent in number and containing much blood. A considerable amount of dirty gray material is expelled with the stools during this time, consisting partly of slough from the ulcers and partly of intestinal secretion and pus acted upon by the silver nitrate. Within the first twenty-four hours, in the favorable cases, improvement begins. The blood in the stools is greatly decreased in amount or entirely absent. In the next twenty-four hours the pus disappears. The movements are less frequent and, provided the patient can be given food, the stools soon begin to assume their normal appearance. Some patients require a second, or even a third, treatment to bring about a completely favorable result. Patients which are not improved by the treatment are not influenced unfavorably. A few infants, who were given this treatment, showed considerable reaction following the injections, but all responded well to stimulation. These infants were very sick and I doubt if the reaction was any greater than it would have been had they received simple irrigations without the subsequent silver nitrate injection.

There were two distinct types of cases in which silver nitrate injections were used. First, the early acute cases, seen during the active period of the disease; second, the subacute or chronic cases, in which blood and pus persisted in the stools after the temperature and toxemia had disappeared. In the acute cases our only methods of estimating the value of the treatment are (1) to judge between the course of the particular cases under observation and what we might have expected the course of that case to have been without treatment; or (2) to compare a large series of cases treated by this method with other series not so treated. This is an unsatisfactory means of judgment, but it is the best we have and the one commonly employed in determining the value of various therapeutic agents. In the chronic cases, it is easier to show a relation of cause and effect between the treatment and the subsequent history of the case, because if blood and pus promptly disappear from the stools after the use of a silver nitrate injection when they had been present constantly up to that time, it seems reasonable to conclude that the treatment was of benefit.

Perhaps the matter may be made clearer by the citation of a few illustrative cases.

E. F., fourteen months old, was admitted to the hospital July 30 with a history of three days' diarrhea, five to ten movements a day. The stools contained blood, pus and mucus. The temperature was 101.5° F.; the general condition was good. The Flexner bacillus was recovered from the stools by Dr. Kendall. On admission, the patient was given 3 drams of castor oil and the next morning received a colon irrigation followed by an injection of 3% silver nitrate. During the next twenty-four hours there were six movements, containing blood and pus. In the next twenty-four

*Read at the meeting of the New England Pediatric Society, Jan. 28, 1911.

hours there were four movements, only one of which contained a little pus with a slight bloody tinge. From that time on the stools remained good except for a small amount of pus, which disappeared entirely by the fifth day. The patient was discharged well.

E. M., four months old, was admitted with a history of bloody diarrhea of two days' duration. The stools on examination contained blood, pus and mucus. During the first thirty-six hours in the hospital there were fifteen stools. At the end of this time she was given a silver nitrate irrigation. During the next twenty-four hours the number of the stools was reduced to three, but they still contained blood and pus. The next twenty-four hours there were three stools, free from blood and pus. One week later a little blood again appeared in the stool. A second injection of silver nitrate was given and the blood disappeared, not to recur again during the convalescence.

C. T., age one year. Was admitted to the hospital July 7, with infectious diarrhea, fever, toxemia and bloody stools. On routine treatment she improved in general condition, but the temperature remained irregular and the stools did not clear. The number of movements varied from seven to twelve in twenty hours, usually nine or ten. Practically all of them contained pus, often in large amounts, and many of them contained blood. On the nineteenth day after admission she was given an injection of 3% silver nitrate. For the next thirty hours the stools were much worse in appearance than at any time since entrance to the hospital. They contained a great deal of pus, considerable blood and slough. Within the next twenty-four hours, however, the blood had entirely disappeared and did not return. The pus was much decreased in amount and only occurred in one subsequent stool. The number of movements in twenty-four hours dropped to four on the second day and averaged four to five during the remainder of the convalescence.

M., seven years old, was seen in consultation Sept. 4. She had had infectious diarrhea for ten days. There was then no fever, but the stools contained blood, pus and mucus and she showed the effects of the long-continued diarrhea. She was given a colon irrigation followed by a silver nitrate injection. A few weeks ago the doctor who had charge of the case reported that the child "was greatly helped by the silver nitrate injection. It seemed to turn the tide of the disease, and I had no occasion to repeat the injection or to turn to other remedies. Recovery was rapid and satisfactory."

The treatment was used at the Floating Hospital in thirty-two cases. In four of these the hospital record gives no account of the result. One patient was *in extremis* on admission and responded to no kind of treatment. One child was taken home within twenty-four hours, so we know nothing of its subsequent history. Twenty-six cases are left from which to draw conclusions. None of the patients were in any way harmed by the treatment. Three infants showed a rather severe reaction, but it was only temporary in character. In twenty-two of the the cases treatments were given early in the disease. Eighteen of these were improved by the procedure, eleven markedly so, and seven slightly. Six patients were given the injection late in the disease. Three, or one half, were benefited.

In a certain number of cases of infectious diarrhea in infants, an early colon injection of 3% silver nitrate solution apparently hastens the disappearance of blood and pus from the stools, and shortens the course of the disease. In some late cases, where blood and pus persist in the movements, the ulcers can be stimulated by silver nitrate injections and the stools cleared. Since no harm has been done by the use of silver nitrate injections, and some good results have been obtained, it would seem worth while to give this means of treatment further trial.

## V. AN ANALYSIS OF ONE HUNDRED AND SEVENTY-EIGHT CASES OF INFECTIOUS DIARRHEA IN INFANTS.*

BY JAMES HERBERT YOUNG, M.D., NEWTON, MASS.

ONE hundred and seventy-eight cases of infectious diarrhea from the wards of the Boston Floating Hospital have been tabulated for this analysis. These comprise all the cases treated during the last two summers, 101 cases in 1909 and 77 cases in 1910.

All statistics compiled from hospital records are open to more or less criticism, especially, as in this case, when the line of work is not planned out beforehand. In order to make, in this series of cases, such criticism less justifiable, records which have not definitely stated the presence or absence of a sign, symptom or other data sought for, have been excluded. A printed form for history and physical examination, used last year, has called for a definite statement of fact on many points which might otherwise have been overlooked. Thus statistics have been made of more value. The cases were first analyzed by years, but as the results were fairly uniform, most of the figures reported are based on the total of the two summers.

### SEX. AGE. RACE.

Males and females were about equally affected, 91 males and 87 females. Nearly half the cases, 41.5%, occurred between the sixth and twelfth months, only 8 cases were less than three months old, and only 5 cases were three years old or over. Mortality was highest in the children less than six months old, 66%; practically the same from the sixth to the twenty-fourth month, 53% to 54%, and 33% for the cases two years of age or over.

| Age. | No. cases. | Mortality. | Percentage of cases discharged well. |
|---|---|---|---|
| Less than six months, | 44 | 66% | 16% |
| Six to eleven months, inclusive, | 74 | 53% | 27% |
| Twelve to seventeen months, inclusive, | 32 | 53% | 28% |
| Eighteen to twenty-three months, inclusive, | 13 | 54% | 33% |
| Two years or over, | 15 | 33% | 33% |

In 65 cases out of the 77 for 1910, the nationality of the parents was given. Irish, Jewish and American parents headed the list with 10 to 15 cases each. Out of the 65, there was but one Italian baby, a fact particularly surprising as the hospital landing is in the heart of the Italian district.

* Read at the Suffolk District Medical Society, Jan. 4, 1911.

### LOCALITY.

During each of the two last seasons, Roxbury has furnished more cases than any other part of the city. The small number of cases from the North and West ends is noteworthy, especially so since they are the most crowded portions of Boston and also nearest to the hospital.

| | Number of cases, 1909 and 1910. |
|---|---|
| Roxbury, | 27 |
| South Boston, | 16 |
| Charlestown, | 16 |
| Cambridge, | 15 |
| South End, | 12 |
| West End, | 11 |
| North End, | 9 |

### DATE OF ADMISSION.

In 1909 more cases were admitted during August than during July, while in 1910 the reverse was true. As the hospital closes Sept. 15, fewer cases are admitted after Sept. 1, so that the number of admissions for the first week in September offers no comparison with the other months. That atmospheric temperature is an important etiological factor is confirmed by an examination of weather reports. July, 1910, was, as a whole, a hot month, the maximum daily temperature being below 80° in only ten out of the thirty-one days. August, 1910, on the contrary, was a cool month, the maximum temperature being over 80° but eleven days out of the thirty-one. The number of admissions during July, 1910, was 45, decreasing during August to 27. A chart of the maximum daily temperature for July and August, 1909, shows four "hot-spells," in each of which the maximum temperature was above 90° from one to three days. The first lasted from July 11 to 17, the second from July 26 to 30, the third from August 7 to 9, and the last from August 25 to 29. The week following each of these "hot-spells," except the last, which extends up to September, and so may be disregarded, shows an increase in the number of admissions over that of the preceding week. Increased susceptibility to heat is denoted by a comparison of the forty-one admissions for July, 1909, with the fifty-five for August.

| Date of admission. | No. cases, 1909. | No. cases, 1910. |
|---|---|---|
| June 29 to July 8, | 4 | 9 |
| July 9 to July 16, | 6 | 14 |
| July 17 to July 24, | 20 | 11 |
| July 25 to July 31, | 11 | 11 |
| Aug. 1 to Aug. 8, | 14 | 9 |
| Aug. 9 to Aug. 16, | 18 | 7 |
| Aug. 17 to Aug. 24, | 18 | 5 |
| Aug. 25 to Aug. 31, | 5 | 6 |
| Sept. 1 to Sept. 8, | 5 | 5 |

### PREVIOUS INFECTIOUS DISEASES.

The statement that infectious diseases predispose to infectious diarrhea is not confirmed by an investigation of these cases. Only 18 cases out of 178 showed any acute infection during the four months previous to the onset of the infectious diarrhea.

### PREVIOUS FOOD.

As the specific etiological factor of the disease presumably enters the body by way of the digestive tract, it is natural we should first turn to the milk for investigation. It was impossible to trace the sources of milk used before entering the hospital, but it is evident, however, that the disease may be contracted by infants fed on the best grades of milk, even when pasteurized. That cow's milk is not the only source of infection is shown by the fact that in three cases of this series breast milk was the only food.

### SYMPTOMS.

*Fever.* — The presence and persistence of fever is one of the chief symptoms of infectious diarrhea. In the following table, 175 cases are arranged according to the maximum temperature.

| Temperature. | No. cases. | Percentage dead. | Percentage well. |
|---|---|---|---|
| Under 100°, | 47 | 36% | 32% |
| 100.2–102°, | 63 | 50% | 27% |
| 102.2–104°, | 52 | 61% | 19% |
| 104.2–106°, | 13 | 100% | 0 |

This table shows that the mortality increases directly with the rise in temperature. In 13 cases in which the temperature was above 104°, the mortality was 100%. In 44 cases discharged well the average duration of fever was 12.6 days. In 9 of these 44 cases the temperature was under 99°.

*Diarrhea.* — The statements of the mothers in regard to the number of movements before entrance were too indefinite for tabulation. Here again the 44 cases discharged well were studied. There was no diarrhea in 8 cases. The average number of movements was five to six in 24 hours. The average duration of diarrhea was 14 days.

*Vomiting.* — The presence or absence of vomiting was mentioned in 138 out of the 178 cases. Among these vomiting was a prominent symptom in 99, or 71%.

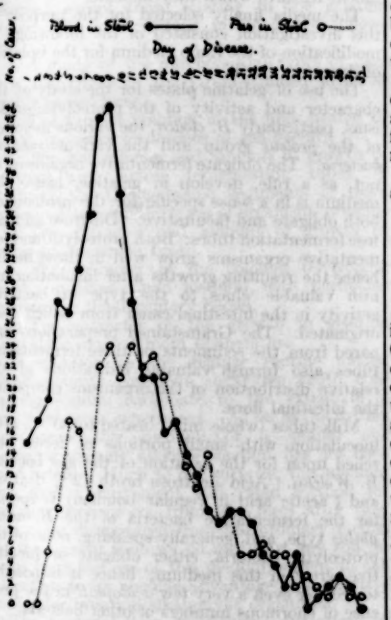
*Prostration.* — In 147 cases, prostration on entrance was mentioned. It was absent in 78, moderate in 49 and marked in 20 cases.

*Blood and pus in stools.* — The occurrence of blood and pus in the stools is shown in the following table.

| | Cases. | Per cent. |
|---|---|---|
| Blood absent in | 21 | 11.8 |
| Blood present in | 157 | 88.2 |
| Blood alone, present in | 56 | 31.4 |
| Blood and pus present in | 101 | 56.7 |
| Pus absent in | 67 | 37.6 |
| Pus present in | 111 | 62.3 |
| Pus alone present in | 10. | 5.6 |
| Mucus was present in all cases. | | |

The cases were next tabulated to find on which days of the disease blood and pus were most commonly found. All cases which had been sick more than ten days before entrance were disregarded. This figure was chosen arbitrarily to exclude if possible those cases starting as an acute intestinal indigestion and later having an infectious diarrhea superimposed, and so to tabulate only those cases which were infectious diarrhea

from the beginning. It was found, when represented graphically, that the line denoting the occurrence of blood rises rapidly, reaching its summit on the eighth and ninth days, when blood was present in 45 and 46 cases respectively. The line then falls sharply, reaching 21 cases on the twelfth day and from then on drops gradually to 0 on the thirty-second day. The line representing the occurrence of pus in the stools reaches its highest point on the ninth and eleventh days, when pus was found twenty-four times. From the eighth to the fourteenth day the line fluctuates between 21 and 24 cases, and from then on follows the blood curve, reaching 0 on the thirty-third day.




DURATION OF DISEASE.

The average number of days in the hospital for the fatal cases was 10.6. Thirty-two per cent of these died within the first five days. In the cases discharged well, the average number of days in the hospital was 26.8, and for those discharged improved, 23.5. The duration of the disease based on the statement of the mother as to the duration of illness before entrance, and the length of stay in the hospital, was as follows:

| | Average duration of disease. |
|---|---|
| Discharged well, | 36.8 days |
| Discharged improved, | 37.8 " |
| Discharged dead, | 20.6 " |

COMPLICATIONS.

One or more complications occurred in 78 out of the 178 cases.

| | Cases. |
|---|---|
| Acute otitis media, | 48 |
| Eclampsia, | 12 |
| Bronchitis, | 7 |
| Bronchopneumonia, | 5 |
| Multiple abscesses, | 4 |
| Nasopharyngitis, | 2 |
| Lobar pneumonia, | 2 |
| Scarlet fever, pyelitis, "weak heart," meningismus and meningococcus meningitis, | 1 case each |

It is doubtful if any other series would show such a large number of middle-ear infections. Their frequency is probably due to the sudden changes in temperature to which patients on a boat are subjected, and also to seal on the part of the house-officers, who are trained to look for them.

Relapses were uncommon. In only 4 cases out of the 178 did relapses occur. Two cases were admitted with a history of infectious diarrhea four and six weeks before entrance, and two had relapses while in the ward.

The condition on discharge of the 178 cases was as follows:

| | Cases. | Per cent. |
|---|---|---|
| Discharged dead, | 96 | 53.9 |
| Discharged well, | 44 | 24.7 |
| Discharged improved, | 17 | 9.6 |
| Discharged unimproved, | 5 | 2.8 |
| Discharged against advice, | 16 | 9.0 |

The mortality of infectious diarrhea as given in series of cases previously reported varies from 6% to 50.9%, the latter in cases in which the dysentery bacillus was found. Such variations only show the difficulty in making a diagnosis of this disease from clinical signs. The severe types are easy to diagnose. It is the mild cases that we overlook, the class of case impossible to diagnose on clinical signs alone, but only by bacteriological examinations of the stools. It is these mild cases which, as dysentery bacillus carriers, form the most common source for the spread of the disease.

## VI. THE ASSOCIATED FLORA OF BACILLARY DYSENTERY.

BY ARTHUR I. KENDALL AND ARTHUR W. WALKER.

(From the Department of Preventive Medicine and Hygiene, Harvard Medical School, and the Boston Floating Hospital.)

THE numerous investigations made in the past upon the intestinal bacteria have been rather closely limited to the morphological and cultural studies of isolated organisms. This method of procedure was the logical one for the earlier observers to follow, and their work was richly rewarded; some of the best-known organisms pathogenic for man were discovered in this way, and the establishment of the etiological agents of cholera, typhoid and dysentery will always be regarded as monuments to their skill and perseverence. The number of diseases in which it has been possible to establish a single organism as the causative agent, however, appears to be limited, and with the methods commonly used this limit seems to have been closely approached.

Notwithstanding the fact that the recognition of these organisms has played a prominent rôle in the diagnosis of these diseases, but little real progress has been made along therapeutic lines, so far as treatment directed against the organisms themselves is concerned; indeed, even at the present time we are ignorant of the conditions which permit these bacteria to gain and maintain themselves in the intestinal tract. We are equally in the dark concerning the symbiotic relations which these exogenous invaders exhibit with the normal intestinal flora.

The studies recorded here, the logical sequence of work which one of us (A. I. K.) has been carrying on for nearly three years, were undertaken with the definite object in view of investigating certain of these underlying causes which permit the unrestrained development of dysentery bacilli in young children. Throughout this work particular attention was directed to the phenomena relating to the biochemistry of this pernicious flora, and as the result of these observations a deliberate attempt was made to bring about conditions in these dysentery cases which should be beneficial to the patient, but which were directly aimed to render the intestinal medium unsuited for the continued development of the dysenteric flora.

It should be stated that the patients upon whom these studies were made were young, with immature and badly upset digestive powers, with limited powers of resistance, and in almost every case seriously or dangerously ill. It is obvious that in such cases it is almost impossible to carry out intensively even the simplest dietary changes which might be indicated from the bacterial standpoint for fear of destroying the already weakened host. This limitation has constantly been kept in mind, and the procedure evolved (which appears in detail in another paper) was elaborated upon this basis.

The procedures followed throughout this work deserve comment. They were designed for practical use by clinicians, and for this reason all complicated technic, and observations requiring several days for their completion, have been reduced to a minimum. The whole idea has been to elaborate a technic which can be carried out advantageously by clinicians who have access to a laboratory provided with the more common appliances. These methods have been found to be practical in studying the intestinal bacteria of experimental animals, and the results of the summer's work indicate that they are equally applicable to the study of human problems of a similar nature.

The salient feature of this investigation is the consideration of the nature of bacterial activity in the intestines rather than the isolation of individual strains of organisms for intensive study; that is, whether the putrefactive or the fermentative types of organisms dominate, and in a general way the measurement of the intensity of these processes. While the interest has centered largely upon the character of the bacterial activity rather than upon the presence or absence of specific organisms, the latter have not been wholly neglected. Those bacteria which either because of their pathological properties or numerical relations appear to be significant have been sought for as well. For this purpose, special media and methods have been invented in several instances. These methods have reduced the time and labor of isolating and identifying these organisms to a minimum. This has been accomplished through the utilization of special enrichment media and by taking advantage of important chemical properties of these bacteria.

The various procedures employed have been described in previous communications, but they will be referred to here in order to bring out the salient features which they indicate.

The media finally selected for the purpose of this investigation consisted of the following: A modification of the Endo medium for the isolation of dysentery bacilli.

The use of gelatine plates for the study of the character and activity of the proteolytic organisms, particularly *B. cloacæ*, the various members of the *proteus* group and the various *subtiloid bacteria*. The obligate fermentative organisms do not, as a rule, develop in gelatine, hence this medium is in a sense specific for the proteolytes, both obligate and facultative. Dextrose and lactose fermentation tubes: Both proteolytic and fermentative organisms grow well in these media, hence the resulting growths after incubation furnish valuable clues to the type of bacterial activity in the intestinal canal from which they originated. The Gramstained preparations prepared from the sediments of these fermentation tubes also furnish valuable indications of the relative distribution of the organisms composing the intestinal flora.

Milk tubes (whole milk) heated to 80° C. after inoculation with small portions of feces were relied upon for the isolation of the gas bacillus, *B. Welchii*. Acid dextrose broth (2% dextrose and $\frac{1}{2}$ acetic acid in regular bouillon) is specific for the fermentative bacteria of the *B. acidophilus* type, and, generally speaking, none of the proteolytic bacteria, either obligate or facultative, grow in this medium; hence it is possible to recover even a very few *acidophili* in the presence of enormous numbers of other bacteria.

Gram-stained preparations made from the feces direct also were found to furnish valuable information, which will be discussed later.

Stools were collected in anal tubes invented by one of us (A. I. K.). These tubes consist essentially of a piece of quill tubing, of glass, about 5 inches long, and 5 mm. inside diameter, with the ends slightly rounded in the flame to prevent injury to the anus when they are introduced. One end of such a tube is plugged rather tightly with a short plug of cotton. The whole apparatus, thus prepared, is enclosed in a stout test tube, the test tube plugged with cotton in the usual manner, and sterilized in the hot air oven. The plug of cotton in the anal tube serves a twofold purpose: it prevents the feces from filling the tube too full, and, when it is desired to empty

the enclosed feces, a wire may be pressed against the cotton in such a manner that it acts as a piston, forcing the contents out in any desired amount.

The technic for the examination of stools adopted for these dysentery cases was as follows:

The stool was collected in the anal tubes in a fresh, uncontaminated condition by simply inserting the anal tube for about three inches into the rectum of the patient; the feces usually flow readily, but at times a second or third trial may be necessary if there is much mucus. The anal tube is replaced in its holder (test tube), brought immediately to the laboratory, and inoculated into the media mentioned above. At the end of eighteen hours all the observations may be recorded except those relating to the gelatine plates. The observations included the following:

1. A study of the numbers and types of bacteria discernible in the Gram-strained fields of freshly passed feces.

2. The type of reaction in the milk heated to 80° C. (presence or absence of gas bacilli).

3. The gas volume, and amount of growth in dextrose and lactose fermentation tubes. A study of the Gram-stained sediments of these tubes to determine the types of organisms present.

4. The character and amount of growth in acetic-acid-dextrose broth.

5. The character of the colonies developing in the modified Endo medium, with particular reference to the dysentery bacilli.

6. The character of the growth in gelatine after three days at room temperature.

In addition to the regular routine media, alkaline broth (nutrient sugar-free broth containing sodium carbonate to the extent of $\frac{N}{5}$ was tried as an experiment. So far as the writers are aware, this medium, or a similar one having a strongly alkaline reaction, has not been used before. Much to our surprise, this medium furnished a convenient and rapid method for isolating *streptococci* from the feces after they had quite disappeared from the ordinary media. At the present time we do not draw any conclusions from the use of this medium except to call attention to its possible advantage as a selective means for isolating alkaliphylic organisms.

The bacterial flora of bacillary dysentery, as it was seen on the Floating Hospital during the summer of 1910, may be divided into three groups. The first group comprises the obligate dysenteric organisms together with other bacteria which are frequently but not necessarily associated with the obligate organisms. The second and third groups represent the bacterial changes which occur in the intestinal flora of these patients following the feeding of lactose.

*Group 1.* — Three prominent organisms make up the "obligate dysenteric flora," — *B. dysenteriæ*, *B. coli* and the streptococcus. In addition, liquefying bacteria, culturally similar to *B. cloacæ*, members of the proteus and subtilis groups, and rarely other liquefying organisms occur. These organisms represent a typical putrefactive flora, growing in the intestinal secretions in the absence of carbohydrate.

*Group 2.* — Transitional flora following the administration of lactose. The bacteria comprising this group, as the name indicates, are transitional between Group 1 and Group 3. They include representatives of the putrefactive flora characteristic of the true dysenteric dejecta, and in addition greater or lesser numbers of the fermentative organisms belonging to the fermentative flora. This group is less sharply defined than the two other groups.

*Group 3.* — The bacteria of this group are the antitheses of the putrefactive organisms characteristic of Group 1. They consist of two distinct types of organisms. The obligate fermentative bacteria, *B. bifidus* and *B. acidophilus*, and in addition a certain number of facultative organisms which have become fermentative in their metabolism instead of putrefactive. Prominent among the latter class is *B. coli*. The numbers of *B. coli* appear to be considerably reduced following the lactose regimen, and they are distinctly fermentative in their metabolism instead of being proteolytes. The streptococci and dysentery bacilli largely disappear when the fermentative flora is well established.

It is a significant fact that *B. bifidus* appear to be relatively more abundant than *B. acidophilus*. The latter organism is more prominent if the patient is fed dextrose or maltose. The absence of excoriated buttocks in the 39 cases studied is partly attributable to the prominence of *B. bifidus*, and the relative absence of *B. acidophilus*. *B. acidophilus* forms a greater amount of lactic acid than *B. bifidus*, and we attribute the absence of excoriations to this fact. The flora developed as the result of feeding lactose resembles rather closely that of a normal breast-fed baby.

The results obtained by this procedure may be summarized in a few words. In the first place it must be remembered that in no case was it possible to study the stools every day. The number of patients under observation and the amount of work necessary to complete one set of specimens made it necessary to choose between two alternatives: to study a very few cases in great detail, or to make fewer observations upon a considerable number of patients. Each method has its advantages, but the latter was the one selected and followed.

Typical dysentery feces from well-marked cases consist microscopically of mucus, usually blood and pus, and only a few bacteria. Not infrequently it is almost impossible to find any bacteria in Gram-stained preparations, unless one searches the preparation diligently. The few that are discernible are of two types: short, almost oval, Gram-negative bacteria, of the *coli-dysentery* type, and Gram-positive cocci, occurring singly, in pairs or short chains. These are streptococci, and they were present in every case. In spite of the fact that there were few bacteria in the stained preparations, good growths were always obtained in cultures.

This relative absence of bacteria, together with the pus, and blood, is a very characteristic picture, and while a definite diagnosis of dysentery cannot be made upon it alone, it is very suggestive.

The dysenteric feces inoculated into fermentation media, dextrose and lactose, produce considerable amounts of gas after eighteen hours' incubation, and the sediments from these tubes stained by Gram's method show large numbers of Gram-negative bacilli, and Gram-positive cocci in chains, of the same morphology as those seen in the direct fecal preparations. The organisms are the same, and consist largely of *B. coli*, *B. dysenteriæ* and the streptococcus. No gas bacilli were found in a true case of dysentery, at least during the acute stage.

A longer or shorter time after lactose feedings are started, the fecal flora undergoes a rather striking change. The streptococci tend to disappear, the colon and dysentery bacilli diminish in numbers, and longer, slender Gram-positive rods take their place. The numbers of bacteria in the dejecta increase considerably in numbers as well.

In the more favorable cases, the flora which results from the administration of lactose resembles that of a normal nursling except that there are relatively more Gram-negative forms referable to the *B. coli* type. The whole cultural complex changes from the aerogenic, putrefactive type to the acidogenic, fermentative type of flora. The length of time necessary to bring about this change varies somewhat and depends, in part at least, upon the numbers and activity of the residual fermentative flora which succeeds in surviving the starvation period in which all food is withheld from the patient.

While the change from the putrefactive to the fermentative type of bacterial activity is, from the standpoint of bacteriology, a favorable sign, it does not always guarantee recovery on the part of the patient. In certain cases, the patient dies after a longer or shorter time in spite of the improved conditions in the intestinal tract, and these fatal cases group themselves into two classes: Those in which the toxemia has been so great that they die from the effects of the poison, and those cases in which the after feeding has been improper.

Unfortunately it is not possible to measure the extent of the toxemia, and it is equally difficult, at the present time at least, to select the most advantageous food to replace the lactose.

The whole question of treatment and after treatment is as yet unsolved. The results, however, from the bacterial standpoint, are highly suggestive, and while these results are as yet incomplete and inconclusive, allowance must be made for the fact that the methods, and the theory which they illustrate, are in the formative stage. Enough has been accomplished to demonstrate the practicability of changing the character of the bacterial flora in the intestinal tract, and it now remains to follow this new line of investigation as far as possible, to define its limitations, and to bring out to the fullest degree its possibilities.

## VII. TWO METHODS OF OBTAINING HUMAN MILK FOR HOSPITAL USE.

BY PEITE B. TALBOT, M.D., BOSTON.

The question which frequently comes up before hospital administrations and their visiting staffs is, How can human milk be procured for the dangerously sick babies within its jurisdiction? In the majority of instances the proposition is hardly discussed but is passed over as something impractical and impossible. Since it has been my fortune to be connected with two hospitals which have procured human milk for their babies with very little difficulty, the object of this paper is to show how breast milk may be obtained in two distinctly different but practical ways. The examples of these two ways are the hospital of the Massachusetts Infant Asylum and the Boston Floating Hospital.

### HOSPITAL OF THE MASSACHUSETTS INFANT ASYLUM.

The hospital of the Massachusetts Infant Asylum, which uses the method of most foreign hospitals, has resident wet nurses who are part of the organization of the institution. These women, secured from other charitable institutions, such as the Society for Helping Destitute Mothers and Infants and from the lying-in hospitals, usually come to the hospital about two weeks after delivery and often are under its care some little time before they are strong enough to bear the strain of supplying milk for more than one baby. Before they are admitted, the mother and child are both examined by the member of the visiting staff on duty for any acute or chronic infectious disease or any physical defect. During the time of probation, each woman is taught the care of her baby under the supervision of a trained nurse and later is given some light work in addition to the entire care of her child. At one time, when they were made to do the laundry work of the whole hospital, it was found that the mothers all contracted "chronic sore throats" and it was decided, therefore, that they should not be permitted to do any heavy work or scrubbing, but should only dust a certain number of rooms and do their own washing.

The amount of food which these mothers require is surprising. They are allowed to have as much as they want of a liberal diet which costs the hospital only 43 to 45 cents a day for each person. The following diet and routine give an idea of their day:

6.30 A.M. Rise and dress.
7 A.M. Breakfast: One pint bowl of mush with milk and sugar. Tea once daily. Every other day eggs or light meat or hash.
10 A.M. Luncheon: One quart bowl of cocoa shells or milk with bread and butter (sometimes one woman drinks two bowlfuls).
12 M. Dinner: Occasionally soup. Always meat (veal, roast beef, corned beef, steak, etc., or ham and eggs), cocoa, potato, carrots, peas, corn, beans, etc. Dessert, custard pie, etc.
1–3 P.M. Bed and sleep or rest.

3 P.M. Luncheon: One quart bowl of cocoa or milk and crackers.

5 P.M. Supper: Cold meat, bread and butter, prunes or apricots and ice cream three times a week.

9 P.M. Mush or cocoa shells (one pint bowl).

There has been only one instance of indigestion from overfeeding during three years, and the general condition of each one has improved under the hospital régime.[1]

The milk of these wet nurses is used in two ways: (*a*) The milk is drawn with breast pumps for the very weak and delicate babies. Although this is often a tedious process, certain women have been able to "draw" more than one quart of milk daily. The milk drawn in this way is placed in sterile jars and kept in an ice-chest until used. (*b*) The stronger babies are put to the breast. The amount of milk taken is recorded by a trained nurse, who weighs the baby before and after nursing. The women are paid according to the amount of milk they supply, at the rate of two cents an ounce for "drawn breast milk" and one cent an ounce for nursed breast milk, up to a limit of sixteen dollars a month.

If these women become troublesome they are sent back to the charities from which they came; but since they are put on their own honor and have so little time on their hands, they rarely create any disturbance. Once a week they are allowed "afternoons out" with the understanding that they are to return before 6 P.M. Each woman stays on an average six to eight months and gives about one quart of milk daily. At this institution there are five wet nurses in the winter, who supply sufficient milk for twenty-four babies, but when the hospital is full of very sick babies, six wet nurses are necessary. Only the very sick and premature babies receive human milk alone; those convalescing are fed on some suitable milk mixture preparatory to their going home.

### BOSTON FLOATING HOSPITAL.

When it decided to obtain human milk for its babies, the Boston Floating Hospital found that the method used at the Massachusetts Infant Asylum was not practicable. Instead, it adopted a plan followed successfully by Dr. Francis P. Denny and reported in the BOSTON MEDICAL AND SURGICAL JOURNAL, vol. clviii, 1908, pp. 625–630.

Dr. Denny says: "The milk was collected by Mrs. A. M. Henderson, a trained nurse. After visiting a large number of nursing mothers in the tenement district, a few were found who had a superabundance of milk. These mothers and their babies were all examined by me and found to be healthy before the milk was used. Precautions were taken to have the milk drawn in a cleanly manner, and put in sterile bottles and then kept at a low temperature. The ability of the mothers to draw off the milk increased markedly after the experience of a week or two. One mother was able to give us over one quart a day. As the milk was taken only from mothers who had more milk than their own babies required, all of the babies continued to thrive while the mothers were contributing the milk. Moreover, the general comfort and prosperity of the family was materially increased by the money which was paid for the milk."

This scheme, as far as I can find out, was original with Dr. Denny and had not been used by any one else until it was adopted by the Boston Floating Hospital, which was fortunate in obtaining the services of Mrs. Henderson, who was familiar with the work and its problems. Mothers willing to supply some of their extra milk were examined by one of the physicians to the hospital for signs of tuberculosis and syphilis and when found free from these diseases were reported to the hospital as suitable wet nurses. Each woman's family physician was then required to sign a card stating that in his opinion it would do her no harm to supply this milk. *In every instance the milk supplied to the hospital was in excess of the needs of their own babies.* In the words of the nurse in charge, "In all cases, notwithstanding the giving of much or little, their own babies are growing like weeds." The women were paid at the rate of sixty cents a quart.

After giving the mothers proper instruction about cleanliness, the nurse had no serious trouble about getting the milk. She refused to accept any really dirty person. Each day a sterilised bottle, with a stopper of absorbent cotton, was left at the house, and the mother drew the milk into the bottle. These bottles were gathered daily and carried packed in ice to the hospital. In several instances drug stores voluntarily acted as centers of collection and distribution. About four quarts of this milk were collected daily. The movement became so popular that many of the mothers were unwilling to accept any recompense. The nurse's report comments thus on this generosity: "Another apparently poor woman, after being consulted twice about remuneration, said positively, 'No, I couldn't; Charity has been good to me, and if I can return it, I am glad to do it.' She is so conscientious that she will not 'go away for Sunday and have my sick babies without my little contribution.' Another, upon receiving a letter of thanks from the hospital, said, 'I'd rather have this letter than $25.00.'"

There was no public list of nursing mothers which could be utilized, so for that reason the nurse had to depend upon her own efforts and ingenuity. She was, however, familiar with the work in general and knew the local physicians, for many of whom she has nursed. At first, possible wet nurses were found with difficulty, but later the word was passed around among the women in the district until finally both physicians and patients sent the names of other mothers who were willing to supply milk.

Although these four quarts of human milk collected daily were not enough to supply one tenth of the babies who needed it, I feel certain that the lives of most of the babies who did get it would have been lost without this means of

[1] These women are under the charge of Miss Allen Chaney and Miss Greta Mabry.

treatment. As many babies as possible were given human milk, sometimes in small or again in larger doses. These infants almost invariably did so well that it was not uncommon to see them quickly regain their powers of digesting cow's milk. With such encouraging results in these few cases we hope to have more milk at our disposal next summer and to use it for a greater number of the babies.

Both these methods of obtaining human milk are practical, and with a small financial outlay one or the other can be adopted by any hospital. Since each plan has been followed successfully in two different types of hospital, no one need say that human milk cannot be had for hospital use, because with sufficient ingenuity it can be obtained.

## VIII. DIARRHEA IN INFANTS ASSOCIATED WITH THE GAS BACILLUS IN THE STOOLS.*

BY ARTHUR I. KENDALL, PH.D., AND RICHARD M. SMITH, M.D., BOSTON.

*Bacillus aerogenes capsulatus* or the gas bacillus (*Bacterium Welchii*) was first discovered by Prof. William H. Welch, of Johns Hopkins Medical School, in 1891, and described by Welch and Nuttall in 1892.

In 1893, W. Fraenkel published the description of an organism which he isolated from a case of gas phlegmon, and this latter organism, together with the bacilli known as *Bacillus perfringens* (Veillon and Zuber), *Bacillus enteritidis sporogenes* (Klein) and *Granulo-bacillus immobilis liquefaciens* (Grasberger and Schattenfroh) all appear to belong to a well-defined group, if, indeed, they are not the same organism.

These bacteria, of which *Bact. Welchii* is the type, are rather thick, plump, Gram-staining rods, which form spores in most instances, although sporulation is not infrequently difficult to bring about. The organisms are obligate anerobes, and usually form capsules in the animal body. They liquefy gelatine, ferment several of the more common sugars, and grow characteristically in milk, producing a "stormy fermentation," evolution of gas and liberate considerable amounts of butyric acid.

According to many observers, these organisms are rather widely distributed in nature, occurring in dust, the excrement of man and the higher animals, in many samples of market milk and in enormous numbers in sewage. It is not, however, a normal inhabitant of the intestinal tracts of normal nurslings after the first two days of the meconium.

The pathogenic powers are variable; certain strains, according to Dr. Theobold Smith, form toxins if they are grown in media containing minimal amounts of sugar. The gas bacillus usually shows rather marked hemolytic powers.

The interest that attaches to the gas bacillus so far as it relates to the work presented here is in relation to its presence in the intestinal tract. It is, as was stated above, very uncommon in the intestines of normal nurslings, not infrequently present in the stools of bottle-fed babies in small numbers, and is usually found in the dejecta of normal adults, to a greater or lesser degree. In spite of the presence of this organism in the feces of man, comparatively few observations are recorded in which it is the causative agent of diseased conditions in the alimentary canal.

Howard, however, has shown that there are instances of more or less extensive superficial necroses of the gastro-intestinal tract associated with the presence of unusual numbers of the gas bacillus, and Tissier has studied cases of acute and "subacute intestinal catarrh" in which these organisms were unusually numerous. These latter cases, as a rule, ran a mild course, and appear to have been associated with a deficiency of carbohydrate (?) in the patient's food. Nobecourt and Rivet, Guillemot and Szczawinska and others have also found these bacteria in acute and subacute enterocolitis. Klein has isolated a similar organism (*B. enteritidis sporogenes*) from the stools of patients in an outbreak of diarrhea, and Andrewes has studied three distinct outbreaks of a benign type of diarrhea which occurred in St. Bartholomew's Hospital in London in which gas bacilli were present in the stools of the patients, and in the milk which was incriminated as the cause of the outbreak. One hundred and forty-six persons were taken ill in one night in one of these epidemics. The prominent clinical features of these cases were abdominal pains, fluid and semifluid stools, with frequently blood and mucus and a relatively short duration of the attack.

In the vast majority of cases, aside from the so-called "foamy organs," the gas bacillus appears to be a saprophyte living upon the intestinal contents rather than a true invading organism, and this statement agrees well with the experience of last summer in Boston. *B. coli* frequently appears to be also present in unusual numbers in certain of these cases, and Sittler believes that *B. coli* and the gas bacillus act together symbiotically in many of these cases. Our experience does not prove this to be a fact, but the evidence certainly is not against such a supposition.

Tissier, as the result of his studies, has arrived at the conclusion that a diminution of carbohydrate is responsible, in many instances, for the overgrowth of the gas bacillus; our studies lead us to believe that lactose (and possibly other sugars, particularly in diarrheal cases where there is ample opportunity for the intestinal bacteria to be largely removed by the repeated evacuations), is of distinct harm, and that the withdrawal of all carbohydrate, temporarily at least, and the substitution of sour milk, is the proper treatment to reduce the numbers of these bacteria. It is difficult to reconcile our experience with that of Tissier, but there is no doubt in our minds that in our cases, at least, lactose was distinctly harmful, and its use was followed by a rise in temperature and a general aggravation of the patient's condition, while the substitution of buttermilk worked wonders. Both Tissier and ourselves appear to agree upon the efficiency of sour milk, and these results are in accord with those of Dunn.

* Read before the New England Pediatric Society, Feb. 25, 1911.

Last summer at the Floating Hospital certain selected cases of diarrhea were studied in relation to the bacteriological findings in the stools. Among the routine investigations made was a test for the gas bacillus. This test was done without a definite idea as to what might result, but in the hope that some facts of interest and value would come to light. The method employed has already been described in a previous report, but may be repeated here. It consists essentially in inoculating sterile tubes of whole milk with a small portion of the suspected stool thoroughly emulsified in it and immersed in a water bath to above the level of the top of the milk and heated to 80° C. for twenty minutes, then incubating at body temperature for eighteen to twenty-four hours. As an alternative procedure, the infected milk tube may be gradually brought to the boiling point of water in a water bath, kept there for three minutes, then incubated as above. By so doing, all bacteria not in the spore state are killed and the development of whatever spores may be present into vegetative cells is unrestrained by the presence of non-spore-forming organisms. Those cultures containing gas bacilli present at the end of the period of incubation three prominent features: (*a*) The casein is largely dissolved (usually at least 80%); (*b*) the residual casein is slightly pink in color and filled with holes, the result of the stormy fermentation; (*c*) the odor of the culture strongly suggests that of rancid butter, due to the formation of butyric acid by the gas bacillus. Gram-stained preparations made from such growths show rather thick, short, Gram-positive bacilli with slightly rounded ends. Controls suitably studied have shown that cultures presenting this complex are in reality gas bacilli.

Very frequently "pseudo-reactions" occur; there is, as above, a decided liquefaction of the casein, but the shotted appearance of the residual casein is absent and there is no odor of butyric acid. These growths have been found to contain *B. subtilis* or members of the subtilis group, and are not to be regarded as even suggestive of *Bact. Welchii*.

This method has several things to be said in its favor. In the first place, it is simple. No special medium has to be prepared, no careful technic is necessary to assure accurate results. In the second place, it is rapid. The diagnosis by this method can be made by the end of twenty-four hours. In the third place, it appears to be reliable. As has been stated above, suitable bacterial controls prove that when this reaction is present the organism causing the reaction is the gas bacillus.

In the routine application of this test to the stools examined the results were negative in the vast majority of instances, but during the course of the summer certain cases were found in which it appeared that gas bacilli were playing an important rôle in causing the diarrhea. Therefore, it seemed worth while to make an examination of a large number of stools to determine if possible the distribution of these organisms. The stools examined were for the most part derived from Floating Hospital cases; a few were secured from other hospitals and certain private cases. Many of these were normal stools, others showed some undigested material and still others contained mucus, pus and blood in varying amounts. All together there were examined 293 stools, which from our results naturally divided themselves in three groups. (1) Those in which no gas bacilli were found. These were 271 in number and require no further comment except that the great proportion of stools in which the test was negative showed that the gas bacillus is relatively rare in the stools of infants and young children. (2) Those in which few bacilli were present, 8 in number. It is well known that the gas bacillus not infrequently occurs in older children on mixed diet and, as has been pointed out by other investigators, it may sometimes occur in infants. The bacilli were so few in number in these cases that they apparently are of no significance except that it is possible that under certain conditions the organisms might multiply and the cases would then fall into the next group. (3) Cases in which the organisms are very numerous, 14 in number. The organisms in this group occur in such numbers and relations as to warrant the assumption that they play an important rôle in the causation of the disease. The fact that these cases gave a history of long-continued diarrhea or of diarrhea of great severity would make it improbable that the bacteria would remain in the intestinal tract in such large numbers unless they were a causative factor of the diarrhea. The following cases are cited as illustrative of this third group.

E. C., six months old. Was admitted to the hospital Aug. 14. There was a history of eight days' diarrhea and a convulsion the day before entrance. The temperature was 100. There was marked prostration and the next morning the stool contained pus and blood. A diagnosis of infectious diarrhea due to dysentery bacillus was made and the routine hospital treatment for that condition instituted. This was continued for a week, but the child did badly and was growing worse when gas bacilli were found in the stools. It may perhaps be well to explain that, owing to the large number of cases on the boat, only certain cases were selected for bacteriological examination of the stools. This case was not investigated until it had been in the ward a week, which accounts for our not being able to make the diagnosis sooner. As soon as the gas bacillus was found, however, buttermilk was given. This was vomited at first, but after twenty-four hours was well taken and improvement in the condition of the patient and the character of the stools was at once apparent. This improvement continued until ten days later, when the patient developed pneumonia, which proved fatal.

This case is interesting for several reasons. The diagnosis of infectious diarrhea was made from the clinical examination and in another similar case would be likely to be made again. It is of the type which cannot be accurately differentiated without the aid of bacteriological examination of the stools. Gas bacilli were found in the stools, but no dysentery bacilli were present. This has been our experience in every severe case: that the two groups of organisms have not been found to

exist in the same patient at the same time. There was prompt and striking improvement with the institution of the proper treatment. It is not improbable that had the correct diagnosis been made at entrance and the appropriate treatment given, the patient might have been saved. It is in just this sort of a case that we believe the method described will be of definite and permanent value.

C. M., three years. Entered the hospital Aug. 5. A diagnosis of infectious diarrhea was made and he was given the initial starving followed by lactose solution. He also had irrigations of the colon. He did not do well on this treatment. The temperature was high, the pulse irregular and the general condition poor. Two weeks after admission the stools were examined bacteriologically and no dysentery bacillus found, but the gas bacillus was present in large numbers. He was immediately put on buttermilk and as promptly responded. The general condition at once improved and he was discharged well.

This case is interesting as suggesting the possible danger of the treatment of cases as infectious diarrhea which in reality are not such. The day following the giving of lactose to the child the temperature rose to 101 and the next day to 103, for which no explanation could be found. Lactose consequently was omitted and the temperature fell. On resuming lactose it rose again, this time, however, only 1°. This patient also received colon irrigations, but derived no benefit from them. He might have been spared this shock had it been known that there were no ulcers present.

C. T., aged one year, is chiefly interesting as illustrating that gas bacilli may appear in the stool without any red flag of warning. This patient had been in the hospital one month and was convalescing from infectious diarrhea. She was not doing especially well; at the same time the stools were not markedly different from what they had been. In the course of routine examination gas bacilli were found in the stools and she was immediately given buttermilk. Her condition improved gradually from that time on and she was discharged well.

From these few cases it will be seen that there exists a group of diarrheas in infants which it is difficult or impossible to differentiate clinically from infectious diarrhea caused by the dysentery bacillus and in which, apparently, the gas bacillus is the etiological factor. It is to be stated, however, that it is important that this differentiation be made because the treatment which is of value in cases of infectious diarrhea is apparently distinctly harmful to cases of diarrhea caused by the gas bacillus.

The treatment of cases of diarrhea associated with large numbers of gas bacilli deserves a word. The use of buttermilk in certain cases of diarrhea has been tried by many men. In our experience the use of buttermilk in this group of cases has been very satisfactory. In all our cases in which buttermilk was tried the response to treatment was immediate and permanent.

In conclusion, it may be said that apparently there exists a group of diarrhea in infants impossible to differentiate clinically from infectious diarrhea caused by the dysentery bacillus. These cases are associated with the presence of large numbers of gas bacilli in the stools. The bacilli occur in such numbers and in such relations that it seems reasonable to believe that they are the etiological factor of the diarrhea. A simple method for detecting the presence of gas bacilli in the stools has been described by means of which it is possible within twenty-four hours to make a definite diagnosis of diarrhea caused by the gas bacillus. This diagnosis when made gives the indication for treatment with buttermilk. In the application of this method, and the differentiation of this group of cases due to the gas bacilli, a distinct advance has been made in the diagnosis of diarrhea in infants.

## IX. DOUBLE OTITIS MEDIA. DEHISCENCE OF THE FLOOR OF THE CAVUM TYMPANI. STREPTOCOCCUS MENINGITIS.

BY DANA W. DRURY, M.D., BOSTON.

The following case is of interest on account of its rarity:

B. S., aged nine months, was admitted to the wards from the day deck on July 24.

*Past history.* — Weight at birth, 4 lb. Breast fed and negative history up to eight days previous to admission. Family history negative.

*Present illness.* — When first taken ill the baby vomited ten or more times daily. Then more or less vomiting to the time of admission. The baby had temperature of 101° F., with considerable prostration. Sleeps most of the time except when fed and then vomits several times.

*Physical examination.* — Well-developed and nourished child, 14 lb. General condition: Marked prostration, dusky, and eyes rolled up. Pupils equal and react to light, tongue clean.

*Heart:* Sounds regular but poor quality and fetal in character.

*Lungs:* Negative.

*Abdomen:* Level, soft and tympanitic. Knee jerks very lively. No Kernig present.

Both membrana tympani red and bulging, but no perforations. No landmarks seen. No rigidity of neck or retraction. Membrana tympani of the left ear was incised with the usual seropurulent discharge through the wound. The membrana tympani of the right ear was also incised properly by Dr. C. H. Lawrence, Jr., of the house staff, with immediately a profuse discharge of dark blood, not pulsating. The canal of the ear was plugged and the hemorrhage controlled.

When I saw the baby a short time afterwards I found that although tight packing of canal would control the bleeding, on removal of dressing the bleeding would begin again. The origin of the bleeding could not be seen, as I could not keep the canal free from blood. The canal was finally packed and an outside dressing applied. Head raised and to be kept absolutely quiet. Calcium lactate, gr. i, every four hours was used, plus urotropine, gr. v, per rectum, every four hours.

July 25. Slight Kernig and rigidity of neck present; sleeps most of the time. Ear still bleeds when packing is removed. Lumbar puncture showed cloudy fluid with pus cells and chains of streptococci.

July 26. Child unconscious, eyes rolled up

pulse weak, temperature 102° F. Little response to stimulation.

July 27. White count, 13,950; polynuclears, 78%; lymphocytes, 15%; eosinophiles, 6%; temperature, 102° F., with increasing pulse-rate and respirations. Child remained in about same condition as above and died in afternoon on the 28th from streptococcus meningitis.

Immediately after death the canal of the ear was cleaned. Membrana tympani cut away and absence of floor of middle ear found with jugular vein mounting into middle-ear cavity. Passed probe some distance down neck and pressure on neck in an upward direction would flood field with dark blood. Petrosquamosal suture open.

When the lateral sinus is large and unusually far forward the bulb is likewise large and the fossa, which is consequently deeper, may arch up into the floor of the tympanic cavity, from which it may be separated merely by a thin and translucent plate of bone which occasionally shows an osseous deficiency.

Cases have been reported that when the above condition is present the blue color of the jugular vein will show through the lower segment of the membrana tympani and, of course, if present, a paracentesis should be done higher and posteriorly. But with a bulging, congested, edematous condition present, the color of the vein will be lost. Quickly tamponing the canal ought to be sufficient to control the bleeding.

## X. A CASE OF INTUSSUSCEPTION.

BY SETH VINCENT, M.D., BOSTON.

Mary M., an infant of two months, was admitted to the Boston Floating Hospital, Aug. 21, 1910.

She was a breast-fed and perfectly healthy baby up to the day before entrance. At 4 A.M., the child awoke screaming with pain. She was pale but did not vomit. At noon, about eight hours after the onset, the child passed a stool of bloody mucus. She was seen by a doctor in the afternoon, who gave some bismuth and calomel, omitted the breast feedings, and put the child on a diet of barley water. During the night the infant had two black movements. In the morning she vomited for the first time, and passed another stool of reddish mucus with a streak of blood. The mother brought the child to the hospital in the evening, about forty hours after the onset of the attack.

At the time of the examination the patient was resting quietly, apparently not in pain. She was a well-developed and very well-nourished child that looked pale but did not appear sick. The heart and lungs were negative. The abdomen was full and tympanitic, but not distended. There was no spasm in the right lower quadrant, but some resistance in the lower left abdomen which prevented deep palpation. No tumor could be felt. On rectal examination, while there was a sense of resistance high in the pelvis, no definite mass could be felt in the rectum. During the examination, the patient had a small movement, consisting of clear, red blood. The temperature was 101°, pulse 115, respirations 32. A diagnosis of intussusception was made on the typical history, and the infant prepared for operation.

Under ether a deeply placed tumor of indefinite outline and extent could be felt above the pubis. The abdomen was opened by an incision, a little to the left of the umbilicus. There was some free fluid. The tumor proved to be an intussusception, which occupied a vertical position in the left half of the abdomen. The sheath consisted of the sigmoid, the descending and part of the transverse colon. The neck was between the umbilicus and the liver, and the apex extended into the pelvis. The tumor was fairly movable and could be drawn outside the abdomen, where the invagination was reduced. The reduction of the intussusception, as usual, was easy until the apex approached the neck. At this point the unfolding process came to a halt, and the swollen apex of the intussusceptum was only forced through the neck, when firm backward pressure against the advancing point was supplemented by a gentle pull on the invaginated bowel. In spite of some care, the final step in reduction was not accomplished without making a longitudinal tear in the bowel through the peritoneal coat. The color of the bowel was much darker than normal, but its surface was smooth and glistening. There were no adhesions. The head of the cecum, which formed the advancing point of the intussusceptum, was stiff and thickened. After repairing the tear in the peritoneum with catgut sutures, the bowel was washed with salt solution and replaced in the abdomen. The incision was closed with through and through silkworm gut sutures.

For the first twenty-four hours after the operation, the infant was kept quiet by two injections of morphine in gr. 1-100 doses. Water was given by mouth the night following the operation. The child took breast milk in small amounts the next day, and direct breast feedings began on the fifth day. The bowels moved without enema or cathartic twenty-four hours after the operation. On the second day there were seven small dejections, dark in color, growing gradually lighter. Fecal matter appeared in the dejections on the third day. On the fifth day a stitch abscess was opened in the upper half of the wound. The infant was discharged on the nineteenth day after the operation. One month later the child was seen at the Boston Children's Hospital in normal health except for a small hernia in the scar just above the umbilicus.

## XI. A METHOD OF COLLECTING URINE FROM FEMALE INFANTS.

BY CHARLES H. LAWRENCE, JR., M.D., BOSTON.

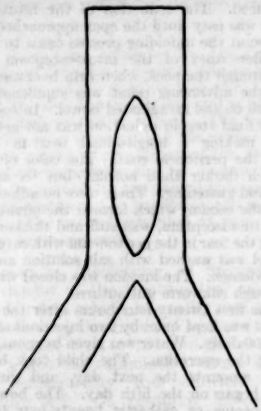
The apparatus described here was used in a number of cases on the Boston Floating Hospital during the summer of 1910 for collecting specimens of urine from female babies. It is easy to construct and was generally efficacious. It did not seem to bother the patients while in place, and produced no local irritation. It can be used for the collection of twenty-four-hour amounts as well as for single specimens.

The materials necessary are a strip of adhesive plaster an inch and a half to two inches wide and four to six inches long, according to the size of the baby; the thumb of a rubber glove (those no longer fit for surgical use will generally serve), and, for single specimens, a heavy glass test tube. For collecting twenty-four-hour specimens the test tube is replaced by a piece of glass tubing which is connected by rubber piping with a bottle placed beside the bed.

The apparatus is prepared in the following manner: In the strip of adhesive tape there is

cut a hole a little larger than the vulval orifice of the infant from whom the specimen is to be obtained. The end of the strap which is to be applied posteriorly is split into two tails, the cut being carried close to the hole (Fig. 1). The glove thumb, cut as in the diagram (Fig. 2), is

FIGURE 1



dropped, tip first, through the hole in the strap, the adhesive side of which is held uppermost. That part of the rubber thumb which remains above the hole is turned down on to the adhesive surface of the strap and pressed firmly against it, care being taken to have the rubber flange narrow enough so that there will be a band of adhesive

FIGURE 2

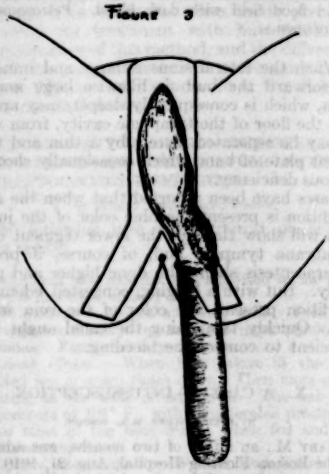


surface around it. The tip of the thumb is cut off, the test tube inserted and the joint made tight by wrapping it with adhesive tape.

To apply the apparatus, the strap is placed over the perineum so that the opening in it lies over the vulva, the anterior end extends up on to the lower abdomen, while the posterior tails are directed backward and outward over the buttocks, avoiding the anus (Fig. 3). Gentle rubbing causes the strap to lie smoothly and prevent leakage.

When the strap is in place the vulval orifice is covered by the open end of a rubber funnel through which the urine drains into the receiving vessel. If a single specimen is desired, the heavy test tube may be allowed to rest between the baby's legs, the upper end being slightly raised. For twenty-four-hour amount the rubber piping

FIGURE 3



is led to the bottle on the floor as the tubing in constant drainage of the bladder in adults.

Removal of the apparatus is not painful, the strap peeling off easily. The adhesive tape must, of course, be changed each time the apparatus is used; the glove finger should serve for several cases.

## Reports of Societies.

### SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

TWENTY-THIRD ANNUAL SESSION, HELD AT NASHVILLE, TENN., DEC. 13, 14 AND 15, 1910.

(Concluded from No. 8, p. 273.)

#### A MALIGNANT INTESTINAL GROWTH REQUIRING THE REMOVAL OF AN UNUSUAL NUMBER OF ABDOMINAL STRUCTURES.

DR. THOMAS S. CULLEN, of Baltimore, in his paper reported the case of a patient, fifty-six years of age, very pale and emaciated. Within a few hours prior to operation her weight had been reduced from 120 to 85 lb. Pelvic examination revealed a growth plastered on the posterior surface of the uterus. This almost filled the pelvis and felt very much like a myoma. The patient, however, gave a history of flattened stools

occasionally associated with diarrhea, and a malignant intestinal growth was suspected. On opening the abdomen Dr. Cullen found a growth involving the lower portion of the descending colon, also a loop of small bowel, and extending out and forming a tumor mass in the mesentery of the small bowel. Intimately blended with this tumor mass was the uterus. The appendix was also involved. As the patient's condition was very poor the operator hesitated to do anything, but the family physician said that she could only live a few days in her present condition, and that she was suffering a great deal. As no secondary nodules could be found either in the mesentery, in the lymph glands or in the liver, removal was undertaken. The uterus was amputated through the cervix and with the tubes and ovaries turned up on the surface of the tumor. The appendix was next amputated, carefully covered over with gauze and also turned up on the tumor. About three feet of small bowel and almost a foot of large bowel were then clamped off and the mesentery of the small bowel containing the tumor gradually tied off. All the structures mentioned were removed in one piece, as it would have been absolutely impossible to separate the uterus without entering the cancerous mass and opening up the bowel. It was possible to remove the entire mass without soiling the peritoneum. The four ends of the bowel were closed. A lateral anastomosis was then made between the small bowel and the cecum, and as the descending colon had been redundant it was possible to do a lateral anastomosis between the descending colon and the sigmoid. A drain was laid in the pelvis. The specimen was exhibited. The patient made a very satisfactory recovery and was at present in good health. The ultimate outlook was not a favorable one.

### ANEURYSM.

Dr. J. Garland Sherrill, of Louisville, Ky., reported a case of aneurysm, and described a new method of ligature of the left subclavian. From a study of the reported cases and his own work, the following conclusions were drawn: That ligature of the subclavian artery in the first portion of the right side showed a higher mortality than on the left. This was probably due in part to the short distance between its origin and the first branch, and also to its close relation to the pneumogastric nerve, thoracic duct and the internal jugular vein. The mortality of ligature in the second division is 55.5%; in the third division, about 50%. The mortality was greater when ligature was done for injury to the vessel than for aneurysm. With present methods the mortality of ligature in any portion of the subclavian should be greatly reduced, as was shown by recent results of Halsted, Schumpert, Jungst and Curtis. Distal ligation had not proven satisfactory. When the aneurysm was situated high on the axillary artery or upon the distal portion of the subclavian, the anterior operation should be employed when the vessel was accessible. The method here described was offered for the treatment of those cases in which the aneurysmal tumor encroached upon the tissues of the neck in such a way as to preclude the possibility of ligation by the anterior method. He had found that at the origin of the left subclavian from the arch of the aorta there was no danger of including the pneumogastric nerve in the ligature or of damaging the thoracic duct.

### GOITER OPERATIONS.

Dr. John R. Wathen, of Louisville, Ky., described an improved technic in goiter operations, based upon an experience of 142 operations for the different types of goiter, with no case of injury to the recurrent laryngeal nerve or any clinical evidence of injury to the parathyroids. The use of the scissors had replaced the knife entirely, and all the structures, beginning with the skin, and later the enlarged thyroid gland, were elevated and approached from the under surface. This lessened the hemorrhage by placing the parts on the stretch, made the work more rapid and safer and allowed of easier blunt dissections being made. The neck was opened by pinching up the skin with the fingers, and making a small cut through the skin and the platysma. The cut surfaces were now grasped by vulsellum forceps and traction was made upward; next, blunt-pointed, curved scissors were used as a dissector and the skin with the attached platysma was rapidly separated from the muscles below and then cut along the curved line used by the Kochers. By continuing the upward traction, the two large skin flaps were dissected up to the hyoid bone above, and to the sternum below. The ribbon muscles were now separated in the middle line and clamped high up and cut on one or both sides when needed, as had been suggested and practiced by Dr. C. H. Mayo. The fibrous and the true capsule over the goiter was next opened, and with a large pair of vulsellum forceps, the enlarged lobe was elevated and traction was made in an upward direction and to the opposite side of the neck. This readily allowed the capsule to be dissected downward and placed the blood vessels to be ligated on the stretch, causing less venous hemorrhage, and relieved the trachea of the pressure from the weight of the tumor. The vessels could now be clamped as the elevated goiter lifted them away from the surface of the capsule. The capsule adherent to the posterior structures was thus separated from the vessels, and there was no danger of the nerve being included with the vessels or any danger of injuring the parathyroids. Occasionally, when the enlarged lobe extended high up in the neck, it was better to place on a second vulsellum forceps on the upper part and make traction upward and downward to better expose the superior thyroid artery and vein. This constant upward traction on the tumor allowed it to be rapidly dissected from the posterior structures, and only held by the isthmus of the gland. A large clamp crushed this part, which could be sutured over. The capsule, muscles and skin were now closed in the usual way and drainage provided through a stab wound in the lower flap. This technic differed from that of others in that it did not employ the knife, which was dangerous in neck surgery; it cut the skin and superficial structures, only after they had been elevated and dissected up from below, and it grasped the goiter with vulsellum forceps and elevated it away from the dangerous area underneath. This constant traction caused much less hemorrhage and allowed of a rapid operation, within plain view of the surgeon. It was surprising how few forceps were used when the venous hemorrhage was thus controlled.

### COLLAPSE OF THE TRACHEA WHILE PERFORMING THYROIDECTOMY.

Dr. T. C. Witherspoon, of Butte, Mont., said that during the last fourteen months he had twice had the trachea collapse while performing thyroidectomy for exophthalmic goiter. The predisposing cause of collapse of the trachea was the anatomical defect in the rings posteriorly. This allowed the lateral walls to approach closer under pressure and to change the cross section of the tube from a circle to an oval with its long diameter anteroposteriorly. Another factor influential in starting a collapse was the proximity of the recurrent laryngeal nerve to the thyroid gland. It was possible that more or less softening occurred from the toxic effects of the gland secretions. The one

prophylactic measure which he suggested as a means of avoiding pressing upon the trachea was a para-sterno-cleido-mastoid incision. This enabled the operator to raise the gland out of its bed without medianward pressure of appreciable degree. No doubt a collar incision with enucleation from between the sterno-hyoid and sterno-thyroid muscles of either side necessitated considerable pressure upon the trachea. While working out the problem of removal of the thyroid under local anesthesia, he found it very much easier to do so by the paramuscular than by the collar incision. Manipulation was easier and discomfort minimized. He experimented upon the cadaver in developing a technic and removed over twenty goiters under local anesthesia before using a general anesthetic. This was excluding his first case operated upon in the early nineties to which chloroform was given. Of late years he had used the collar incision, possibly modified slightly, but he was rather of the opinion that his former plan of paramuscular incision gave a better field, made operating easier and did not leave an ugly scar. He believed this incision would prove a valuable prophylactic against tracheal collapse.

CATHETERIZATION OF THE COMMON DUCT AS A PRACTICAL AND EFFECTIVE UPPER ROUTE FOR ENTEROCLYSIS MEDICATION IN TOXIC BILIARY CASES. (MC ARTHUR'S PROCEDURE.)

DR. RUDOLPH MATAS, of New Orleans, related his experience with this operation and said it was a conclusive demonstration of the good effects of this mode of procedure. It convinced him that it constituted one of the most valuable therapeutic assets in dealing with the dangerous post-operative complications of biliary cases. Since his first experience, he had had occasion to try it in another case of choledochus drainage after cholecystectomy or gangrenous and perforated gall bladder. In this case, notwithstanding the excellent effect on the circulation of the duodenal infusion, which was liberally applied, the patient succumbed on the fifth day from the effects of general peritoneal sepsis and exhaustion due to secondary pulmonary infarcts. He had also applied it in three other cases, two referred to him by other surgeons, of persistent biliary fistula after cholecystectomy for multiple calculi and cholecystitis. In these cases he had been surprised by the rapid cure of the fistulæ after repeated catheterization of the biliary tract, including the duodenal orifice of the common duct. In no case had he had occasion to apply the simple procedure recommended by McArthur, which was to connect a saline drip to a drainage tube in the gall bladder, thus allowing the water to find its way into the duodenum via the cystic duct. This was a very simple performance; but in all his cases he had preferred to inject the fluid directly into the duodenum by introducing a catheter through the gall-bladder opening into the common duct and then into the duodenum. For this purpose, he had found nothing so effective as a ureteral catheter beginning with a fine bougie and gradually dilating with the catheters until the number three of the French scale had been reached.

SOME SUGGESTIONS RELATIVE TO THE PREPARATORY OPERATIVE AND POST-OPERATIVE TREATMENT OF CASES OF ACUTE INTESTINAL OBSTRUCTION.

DR. JOHN YOUNG BROWN, of St. Louis, Mo., stated in this paper that an analysis of the records of 59 cases of acute intestinal (mechanical) obstruction coming under his care with the view of ascertaining the treatment received in each case prior to operation and the bearing this treatment had on the mortality had convinced him that the general profession had yet to appreciate that acute intestinal block was one of the gravest and most disastrous surgical emergencies, and that the outcome of a given case depended largely upon the time elapsing between the development of the condition and its relief by surgical interference. Of the 59 cases recorded, 27 required primary resection for gangrene of the bowel. All of these cases save one resulted from strangulation due to hernia, the exception being due to a gangrenous intussusception. Of these 27 cases, 5 died, giving a mortality of a little over 20%. In 12 cases the formation of an artificial anus was necessary. Three of these were for strangulated umbilical hernia, 4 for strangulated inguinal hernia, and 5 were for acute obstruction due to malignancy. Of these 12 cases, 6 died, giving a mortality of 50%. Twenty cases of strangulated inguinal hernia in which the contents of the sac was such that it could be returned to the abdomen resulted in the loss of one case, a mortality of 5%. The total mortality in the 59 cases was a little over 20%, a mortality entirely too high and largely due to conditions avoidable. The history of each case without a single exception showed that temporising methods were resorted to prior to operation. He illustrated this by selecting two cases at random from the list, one operated on fifty-two hours after strangulation, the other seventy-two hours. Gangrenous bowel was found in each. Taxis, cathartics and morphine, with hot applications to the abdomen, had been used in each case, the cases being referred to operation as a last resort. That the general profession still used such methods was not to be wondered at. Surgery, to be successful, must recognise two factors always present in acute intestinal blocks. First, and least important, was the mechanical block in the bowel, the actual obstruction. The second, and incomparably the more severe, was the septic absorption from the distended, congested and perhaps ulcerated bowel above the place of stoppage.

After urging careful preparation of the patient with particular attention to the removal of the stomach contents by means of the stomach tube, he described a method of draining a distended bowel above after the constriction was relieved. In the treatment of gangrenous bowel found in the sac of a femoral hernia, he strongly advocated the use of a supplementary abdominal incision as possessing many advantages when it became necessary to resect the gut. In discussing the post-operative treatment of such cases, he advocated frequent washing of the stomach, the withholding of food by the mouth, and the use of salt solution both under the skin and in the rectum, and he condemned in strong terms drugs in the way of morphine and strychnine.

In cases where an artificial anus had been made, he urged the importance of attention to the passive bowel. He illustrated with the report of two cases how failure to attend to this point in the after-treatment could result in a contracture of the small bowel to such an extent that it would complicate the work of restoring the intestinal continuity.

CYSTS OF THE PANCREAS.

DR. RUFUS B. HALL, of Cincinnati, detailed his further observations on this subject. He reported to the association a case of cyst of the pancreas in 1907, and now reported another case of equal interest which emphasized the great importance of early operation in these cases.

PRESIDENT'S ADDRESS.

DR. W. O. ROBERTS, of Louisville, delivered an address which was literary rather than scientific, and dealt biographically and historically with the names and

achievements of the prominent men who practiced surgery in the South before, during and after the Civil War. It covered the period of years between 1806 and 1892, from the pioneers of the first two decades of the nineteenth century to the few who survived and did work in the last two decades. These names might be divided into two, perhaps three, groups. First, the pioneers; second, the general surgeons; third, the founder of the specialties. In the first are Walter Brashear, Ephraim McDowell, Charles McCreary and Benjamin Winslow Dudley. These the author ranked as pioneers in American surgery. One of whom, Dr. McDowell, was an epoch-making surgeon. The others in early days were conspicuous in the surgery of the South, and did marked and original work, adding much to the medical fame of Kentucky, which was the field of their labors. They were all accomplished physicians as well as able surgeons, and with wonderful industry, learning and art practiced successfully medicine in its three great specialties, as laid down by Hippocrates, namely, medicine, obstetrics and surgery. In those days little beyond minor surgery was done by the country doctor, and the physicians of the larger towns and villages sent their more important cases to the cities, where the men named performed the necessary operations. The specialties of surgery during that period were merely taking form, or being slowly differentiated, and it might be said that these men, while practicing general medicine and doing high-class surgery, did much of the work now done by specialists, and, in short, helped to form and differentiate the specialties. Some of them indeed were its real pioneers. The list being a long one, Dr. Roberts selected a few only for special comment. They were Gunter McGuire, Paul F. Eve, W. T. Briggs, Warren Stone, J. Marion Sims, Samuel D. Gross and David W. Yandell. He gave a detailed biographical sketch of each of these surgeons. The speaker's peroration was reflective, retrospective and eloquent.

### CANCER OF THE UTERUS.

Dr. Reuben Peterson, of Ann Arbor, Mich., described the technic of the radical abdominal operation for uterine cancer, based upon an experience with forty-four cases.

Dr. Willard Bartlett, of St. Louis, Mo., presented an interesting series of lantern slides of distinguished surgeons of Great Britain, of the surgical clinics visited, of the operations performed by these surgeons, as witnessed by the members of the American Clinical Society.

### VOLVULUS OF THE CECUM.

Dr. Horace J. Whitacre, of Cincinnati, reported four cases of volvulus of the cecum, and gave a brief statement as to the nature and frequency of the lesions. In case one, a very movable cecum and ascending colon had passed over in front of them completely around, behind the mesentery of the small intestine, and reappeared in the right side. This patient had suffered three previous similar attacks of obstruction of the bowel which had been relieved by enemata and position. This patient recovered after operation. Cases two and three represented volvulus of the cecum and ascending colon alone, gangrene having occurred in both. One of these patients recovered. A fourth case suffered from volvulus of the cecum and ascending colon, was operated upon in a very few hours, and made a prompt recovery.

Volvulus of the cecum is among the least frequent causes of intestinal obstruction. It had occurred at all ages from sixteen days to eighty years. The symptoms, as a rule, did not differ widely from those of intestinal obstruction from other internal cause. Some authors spoke of a false remission of symptoms after the first two or three days. The mortality was very high even in the cases operated upon (52.2%). The cases reported by the author seemed to present symptoms that were suggestive, namely, first, all suffered premonitory symptoms or previous attacks. Second, all cases presented primary symptoms in the region of the cecum, and a localised distention first appeared at this point. The mortality in this group of cases was 25%.

### PYLOROSPASM.

Dr. Stuart McGuire, of Richmond, Va., said that spasm of the pylorus or pylorospasm was not a disease, but a symptom. It might be caused by rapid eating, by indigestible food, by an ulcer or other lesion of the stomach, but was most frequently the expression of some remote abdominal disease. How appendicitis or cholecystitis caused gastric symptoms had never been satisfactorily explained. It was believed that irritation transmitted to the stomach through the sympathetic nervous system caused an excess secretion of hydrochloric acid. The resulting hyperchlorhydria caused spasm of the pylorus; the pylorospasm caused retention of food beyond the physiological limit, and finally there came motor insufficiency, food stagnation and dilatation of the stomach. The most prominent symptom of pylorospasm was a cramping pain in the epigastrium, which might last only a few minutes or might continue for several hours. In some cases the spasm might relax suddenly; in others it might terminate slowly and gradually. Some patients had attacks several times a day, others at intervals of weeks, and others still only once or twice a year. In the interval between attacks the digestion may be normal. During attacks peristalsis of the stomach was increased, but food could not pass through the pylorus, and often relief came only after vomiting. The patient usually dieted strictly, and lost flesh and strength steadily from starvation and auto-intoxication. In no other class of patients, with possibly the exception of epileptics, was it necessary to be so thorough in preliminary examination and so patient in post-operative treatment. The real cause of the condition must be found, and after it had been removed the patient must be systematically treated until the hypersensitiveness of the pyloric muscle was relieved, and its spasm habit overcome.

After reporting an interesting case, Dr. McGuire emphasized the following points: (1) The necessity of differentiating between gastric symptoms due to organic disease of the stomach and those reflex from other organs. (2) The impropriety of doing a gastro-enterostomy for spasm of the pylorus. (3) The advisability at the time of operation of examining all abdominal organs and correcting every abnormality, lest the obvious might not be the real cause of the symptoms. (4) The importance of the post-operative and post-hospital treatment of patients to overcome the spasm habit of the pyloric sphincter.

### TUMORS OF THE JAW.

Dr. Willis F. Westmoreland, of Atlanta, Ga., presented the pictures of a type of tumor that so far as his clinical experience went had practically disappeared. He had not seen one in years. This type of tumor seemed to have occurred almost exclusively in the negro. In 38 cases operated upon by his father, only one was white. In the 5 cases occurring under his observation, all were in the negro. Among us these cases were known as fibro-cystic tumor; this title very closely described the gross clinical appearance of the tumor. In reviewing the literature of this subject Dr. Westmoreland said: "I am not able to place it, though

it seems to conform more closely to the species of follicular odontoma of the genus odontomata in Bland-Sutton's classification. I would class it as an anomalous form of this species. I should judge they belong to the follicular rather than the epithelial odontoma, although they have never shown malignancy, while the epithelial type occasionally did." Clinically the tumors presented a uniformly well-rounded mass, the surface of which felt hard and dense to the touch. Firm pressure upon the tumor with the fingers would always at some point elicit a distinct crackle; that was characteristic, as in a way diagnostic, though not differentially so, as it occurred in other species of odontoma.

In a research of the literature of tumors of the jaw, which up to a few years ago were classified under the generic term of dentigerous cysts, the essayists had probably had the same trouble as he had, seeing them in their later development and being unable to properly classify them. But in the negro one fact seemed to be true, and that was, no matter what the original type, the later development was always along the same line.

### TRANSFUSION IN PELLAGRA.

DR. H. P. COLE, of Mobile, Ala., presented a review of 20 cases of this disease, and then drew the following conclusions: In the transfusion of 20 cases of pellagra they had found no ill effect resulting directly from the operation. They might safely resort to transfusion in the severe type of case steadily retrogressing, under approved therapeutic procedures. They had noted no advantage in the employment of a donor who had recovered from pellagra, as compared with the donor who had never had pellagra. There was apparently no advantage in the use of a relative for a donor as compared to the use of a non-relative. The recoveries following transfusion in the grave type of cases (60%) compared most favorably with the recoveries (10% to 20%) in the same type of cases in which other therapeutic measures were employed. The employment of transfusion in the terminal stages of pellagra must be undertaken with a full knowledge of the difficulties and dangers of the operation. Without careful selection of the cases and unprejudiced conclusions, this procedure would fall into an undeserved ill-repute.

### THE CAUSAL RELATIONSHIP BETWEEN INJURY AND CANCER.

DR. WILLIAM B. COLEY, of New York, stated that in a previous paper [1] he published an analysis of 170 cases of sarcoma that had come under his personal observation, and stated that no clinical feature of the disease had impressed him more strongly than the frequent association of trauma with its early manifestations. In 46 of these 170 cases there was a definite history of antecedent trauma. Since this paper was written he had observed 740 additional cases of sarcoma, making a total of 910 cases. In 236 cases (26%) there was a definite history of antecedent trauma. The interval elapsing between the injury and the development of the trauma was less than two weeks in 63 cases (27%); less than a month in 97 cases (42%); tumor occurred within the first six months in 137 cases (60%). The disease originated in the bone in all cases (47%) and in the soft parts in 125 (53%). In making a study of all his cases of carcinoma, he presented an analysis of 125 cases of carcinoma of the breast. In these there was a definite history of previous injury in 52 cases, or 41%. In 5 of these the tumor was noted within a week after the injury; in 12 cases within the first few weeks; in 19 within the first month, and in 36 within the first 6 months. He further presented 3 cases that had come under his personal observation which fulfilled the strict, scientific test which Segone required, namely, that a medical examination had been made of the parts by a competent surgeon prior to the accident. He did not attempt to offer a complete explanation of the influence of injury upon the development of malignant tumors, but said that he personally believed more strongly with increasing experience that all types of malignant tumors were of extrinsic origin or parasitic.

[1] Ann. Surg., March, 1898.

The following papers were also read: "Hydatid Cyst of the Liver, Successfully Treated by Operation," by Dr. John C. Oliver, Cincinnati; "Diagnosis of Extra-uterine Pregnancy," by Dr. E. Gustav Zinke, Cincinnati; "Omenopexy," by Dr. Maurice H. Richardson, Boston; "Tumors of the Breast," by Dr. William C. McCarty, Rochester, Minn.; "Causal Relationship between Injury and Cancer," by Dr. W. B. Coley, New York; "Hypernephroma Arising in the Right Testicle," by Dr. James E. Thompson, Galveston, Tex.; "Degeneracy, the Underlying Cause of Disease; How the Unfit Perish," by Dr. Chas. P. Noble, Philadelphia, Pa.

### OFFICERS.

The following officers were elected for the ensuing year: President, Dr. Rudolph Matas, New Orleans; First Vice-President, Dr. Guy Leroy Hunner, Baltimore; Second Vice-President, Dr. J. Garland Sherrill, Louisville; Secretary, Dr. William D. Haggard, Nashville; Treasurer, Dr. William S. Goldsmith, Atlanta.

Washington, D. C., was selected as the place for holding the next meeting; time, December, 1911.

## Book Review.

*Obstetrical Nursing for Nurses and Students.* By HENRY ENOS TULEY, A.B., M.D., Professor of Obstetrics, Medical Department of the University of Louisville. Seventy-three illustrations. Louisville, Ky.: John P. Morton & Co., Inc. 1910.

This little handbook on obstetrical nursing will prove very satisfactory to many nurses. It is most elementary and the style is very clear and concise. The illustrations are on the whole not satisfactory. They often do not show the points which the author wishes to make clear. The one on holding the fundus after labor is poor and no nurse could hold a fundus satisfactorily that way. In making up saline solution, the author does not speak of filtering the solution. When he is speaking of post-partum hemorrhage he gives the nurse no hint that an internal concealed hemorrhage may take place. His paragraphs on the treatment of premature children are too superficial and no nurse could obtain from them sufficient advice to care properly for such children. His description of the use of the Bier bell in mastitis is absolutely wrong, and finally the reviewer regrets that he has devoted two full pages to Schultze's abominable method of artificial respiration. With these many criticism sit, however, is an excellent book and we only hope that in future editions some of these mistakes at least will be overcome.

THE BOSTON

# Medical and Surgical Journal.

THURSDAY, MARCH 2, 1911

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W. M. LEONARD,
101 Tremont Street, Boston, Mass.

## NOTING THE "IMPERCEPTIBLE."

Francis Galton gave prodigiously to science, far more than most of his contemporaries, howsoever generous they were; and perhaps his most valuable contribution was the example of his habit of careful observation. He scrutinised a great deal that most men did not even see. In the realm of art this is rightly esteemed the essence of genius — to have vision of, and to depict, "things invisible to mortal sight"; and in science also is this discernment of things unappreciated by the average man a faculty of genius. Such discernment was temperamental in Galton, and he carried it into the minutiæ of his life. For example, he went some months before his death to the house of a neighbor where a paper of his own was to be read before a little company. Too deaf to hear anything, he nevertheless watched the bearing of the audience. "My experience is that when ladies are not interested they indulge in fidgits; and the average of their fidgits is about two per minute. Now, the average of the fidgits of the ladies present did not exceed two per five minutes; this [he humorously noted] proves to me that they have not been bored, and is as much as I could hope for." On another occasion Galton sat for his portrait; to relieve the tedium his active mind sought something of interest. He counted the strokes of the artist's brush, which numbered about twenty thousand; and upon this experience he based a paper in *Nature*, in which he stated: "Græf described the very last stage of his portrait as 'painting the buttons.' When this stage was reached, he poised his brush for a moment, made three rapid twists with it, and three well-painted buttons were thereby created. The rule of three seemed to show that if so much could be done with three strokes, what an enormous amount of work must go to the painting of a portrait which required twenty thousand of them. At the same time, it made me wonder whether painters had mastered the art of getting the maximum result from their labor."

These slight incidents indicate, nevertheless, the important capacity for attending to the unconsidered; it is by such capacity that seemingly inconsequential facts have been elicited, upon which many wise deductions of science have been based. It was by the same kind of mental gift that Darwin, Galton's cousin, evolved his epochal discoveries and fostered their acceptance. The material — the earthworm, the climbing plant, myriad phenomena — lay before every eye, but nobody else than Darwin had troubled himself to notice them. Genius has been defined as an infinite capacity for taking pains; if to this be added alertness in perception, and interpretation of facts perceived, one has, for science at any rate, a fairly adequate definition of genius.

This faculty of fixing the attention upon the unnoticed things that are under everybody else's noses is the chief essential to scientific discovery. It is recorded that Ricardo's advances in political economy were by reason of his skill in taking account of the "imperceptibles." Of course, this is not all; one must add to the seeing eye the understanding mind. Agassis was wont to take his students out to a great bowlder near Cambridge and ask what they saw on it. Most saw nothing; some saw vague scratches, but only the master had discerned in these scratches ice-markings — proof that the bowlder had been deposited where it was by a glacier.

Oftentimes this power of observation cannot be acquired; it is a precious gift of nature. Nevertheless, something can be done to develop in those not thus gifted a faculty for examining and getting the truth out of generally unconsidered "trifles," and herein lies in large part the usefulness of research work and laboratory methods in our colleges and universities. It is by what Professor Osborn has termed the "centrifugal" method in education that the student is induced to scrutinise, to investigate for himself, to awaken the latent powers of his own mind. And it is to such original and inventive intellect that the world owes most of its stupendous medical and surgical progress during the last six decades.

But not only in abstract science is this subtle gift of value; it is most important in the success-

ful diagnostician. Such an one must first of all have the selective instinct. He must, to begin with, make an exhaustive anamnesis, eliciting every fact, howsoever trivial it may seem, in the case before him, else no reasonably safe deduction is possible. This done, the whole history of the patient must be surveyed. A diagnosis is then reached from a judgment of many factors, one among which might be irrelevant, several of which taken together would be suggestive, a number of which combined would be conclusive.

## PROPOSED HOMEOPATHIC SANATORIA FOR CONSUMPTIVES.

IN another column we publish a communication relative to our editorial under the above title in the issue of the JOURNAL for Feb. 16. Some of our correspondent's comments are well founded, but his statements also contain some errors which it seems just to point out.

In the first place, he declares that the "statement that in the sanatorium at Rutland, containing 350 beds, there are two services of equal size, is not and *never has been* correct." As a matter of fact, from the very beginning there were at Rutland two services, one regular, one homeopathic, to which patients were at first assigned alternately. As the institution increased in size, and more assistant physicians were appointed, the services became more and more uneven, and five years ago three services were established, two regular, one homeopathic. There are, at present, on the homeopathic service at Rutland, 116 patients.

In the second place, our correspondent takes exception to the statement that "no patient at this institution has ever made a request for homeopathic treatment." It is true that no such request has been made since the institution has been in charge of the present board of trustees. Moreover, the stenographic report of the hearing, to which our correspondent later refers, contains the statement by Dr. Cabot, chairman of the board of trustees of the Massachusetts Hospitals for Consumptives: "As a matter of fact, there has been no demand for homeopathic treatment in any of the other three sanatoria, at least so my superintendents tell me. Of course, I cannot say that some of the underlings in the sanatoria have not been asked, but there has been no real demand, or we should have considered the question of looking after it."

In the third place, our correspondent objects to the statements that the treatment given on the two services is identical and that drugs play little part in the therapeutics of tuberculosis. In spite of what he affirms, however, we still maintain that in the treatment of phthisis drugs play a very incidental part. They may be desirable as palliatives, or in the treatment of intercurrent symptoms or disturbances, and as such would be employed by any intelligent physician, but they are not directly concerned with the cure of the disease. Differences in the detail of their administration might exist, but the treatment given on the two services, so far as tuberculosis is concerned, would remain essentially identical.

Finally, our correspondent says: "Did you know that the number of *regular* private sanatoria in our state is almost as small, and that the homeopathic one you refer to treats almost as many patients, as all the rest put together? *That is so.*" As a matter of fact, there are approximately 75 patients at the homeopathic sanatorium in question, and in the regular private sanatoria in this state, approximately 600.

It is true that we unintentionally overstated the present demands of the homeopaths, owing to ambiguity of the bill in which the first and second resolves are not stated as alternatives. The petition to the legislature accompanying the bill, we were not given an opportunity to read. At the hearing on this bill on Feb. 27, it was distinctly stated by the petitioners that their request is for only one sanatorium of 150 beds, either a new institution or the existing one at North Reading, and that on their obtainment of either, they will withdraw from their present opportunity and privilege at Rutland. Their preference is for an entire independent institution rather than for a representative share in those now existing or hereafter to be established.

We regret if our former editorial seemed in any way to misrepresent the case of the homeopaths. If it did so, such misrepresentation was entirely inadvertent, and we believe that no intrinsic injustice has been done.

## REPORT OF THE RHODE ISLAND TUBERCULOSIS COMMISSION.

PRESUMABLY the fundamental problem of tuberculosis is the same in all communities. In different localities, however, the problem may present itself under different aspects, on account of varying local conditions and the personal equation of various observers; and one community may, therefore, reasonably hope and desire

to learn from the experience of another. In view of the recent work of the Massachusetts Tuberculosis Commission, on which we made editorial comment in the issue of the JOURNAL for Dec. 8, 1910, there is particular pertinence and interest in the report of the Commission on Hospitals for Advanced Cases of Tuberculosis made to the General Assembly of Rhode Island in January last.

The Rhode Island Commission was appointed in February, 1910, "to investigate as to the need of hospitals for persons afflicted with tuberculosis in its advanced stage, and to report thereon with a comprehensive plan for the care of such cases." Like the Massachusetts Commission, it made an extensive study of the prevailing conditions with regard to the disease, and presents its results in tables of data, with comment and discussion. The most important of its conclusions and recommendations are:

1. That the logical measure for the prevention of tuberculosis is segregation, especially of advanced cases.

2. That the care of tuberculous patients unable to be properly cared for at home should be undertaken conjointly by the state and its municipalities, and that the state should subsidize local institutions to the sum of six dollars a week for each non-paying patient.

3. That provision should be made for proper instruction about tuberculosis to all consumptives and their families, and to children in the public schools.

It is interesting to note that the commission estimates that the thousand deaths from tuberculosis in Rhode Island each year represent a total annual economic loss to the community of over $8,373,750; whereas, in New York, Prof. Walter F. Wilcox, of Cornell University, places the annual economic loss from some 16,700 deaths of tuberculosis in that state at $64,000,000.

In its recommendation of segregation and state subsidy, the opinion of the Rhode Island Commission coincides with the views of the Massachusetts Commission, and in so far is an endorsement and argument in favor of the policy advocated by the latter.

## A NEW BACTERIOLOGIC MUSEUM.

IT is announced, in the issue of *Science* for Feb. 24, that there has been recently equipped at the American Museum of Natural History "a laboratory to serve as a central bureau for the preservation and distribution of bacterial cultures of both pathogenic and non-pathogenic organisms, and particularly of types of new forms and varieties." The possible educational and scientific value of such a bacterial museum and distributing station are obvious. For its completeness it must depend to a considerable extent on the contribution of specimens from other laboratories and from individual bacteriologists. "It is hoped," continues the announcement, "that the laboratories of medical schools, colleges, boards of health, agricultural experiment stations and those engaged in biochemical work of all sorts, will furnish the museum with cultures at present in their possession, and the laboratory is now ready to receive and care for such cultures. Only organisms which have been identified and which have a definite history are desired as a rule; but in the case of rare species, like the organisms of certain tropical diseases, this rule may be departed from. . . . The laboratory plans also to keep on file descriptions of bacterial species in print or arranged in the form of the standard card and will be grateful for copies of any such descriptions. Descriptions filed in the department will be carefully preserved and living cultures will be kept in good condition, so far as possible, and will be supplied at all times without charge to corresponding laboratories and furnished, so far as possible, and with a reasonable charge, to schools and other institutions which may desire them. . . . Pathogenic forms will be sent only to properly qualified persons."

Such a laboratory should be of great service to teachers of bacteriology, and it is to be hoped that all institutions and persons to whom this request for contributions is addressed will make prompt response and will co-operate in future to maintain the successful efficiency of this new scientific undertaking.

## POTENTIAL LONGEVITY IN MAN AND OTHER ANIMALS.

IT is reported from London that in a recent lecture before the Royal Institution on "Problems of Animals in Captivity," Dr. Chalmers Mitchell, secretary of the London Zoölogical Society, said that "it is extremely doubtful if a really natural death ever does occur in any kind of animal, including man." All deaths from trauma, infection or neoplasm are to be regarded academically as accidental. Any animal living in perfectly hygienic surroundings and guarded from all such accidents must necessarily die a natural death by going to pieces all at once,

like the "one-hoss shay." Even under these utopian conditions, however, Dr. Mitchell places the maximum potential age of only six animal species at over one hundred years, namely, elephants, whales, man, eagles, parrots and turtles. It is somewhat comforting to reflect that we are in such excellent and select company in this potentiality of centenarianism, and that our near kindred, the monkeys, are excluded therefrom. Recent serologic and pathologic experiments, as well as many social observations, have seemed to bear out the statement that

> "We are very little changed
> From the semi-apes who ranged
> India's prehistoric clay";

and it is encouraging that in respect of potential longevity, at least, we have improved on our arboreal predecessors.

## INSANITY IN LONDON.

WE have of late become quite accustomed and even resigned to the gloomy belief that insanity, like cancer and pneumonia and cardio-renal disease, is increasing steadily in all civilised communities, and at a rate proportionately faster than that of the total population. It is, therefore, particularly comforting to learn, from the recently issued twenty-first annual report of the Asylums Committee of the London County Council, that during the year ended March 31, 1910, the increase in the number of insane patients under treatment in the public institutions of the city was only one hundred and ninety-eight, the smallest annual increase recorded since 1892. Moreover, as in our own country and state, the incidence of insanity is proportionately greater among immigrant aliens than among native inhabitants. Perhaps such facts may justify the consoling conclusion that, after all, civilization is not necessarily self-destructive, and that in time education and adaptation may enable the fittest of us to survive even the menace of mental degeneracy, race suicide and other kindred evils.

## MEDICAL NOTES.

SMALLPOX AT LACHINE. — Report from Montreal, Canada, states that a single case of smallpox and three of chicken-pox have recently occurred at the convent of St. Anne, in the neighboring suburb of Lachine. Street quarantine has been established.

THE UNIVERSITY OF PENNSYLVANIA MEDICAL BULLETIN. — We are informed that the *University of Pennsylvania Medical Bulletin* begs leave to state that the magazine was discontinued on March 1, 1911.

CHOLERA IN HONOLULU. — Report from Honolulu states that on Feb. 24 two cases of Asiatic cholera, both in native Hawaians, were discovered in that city. One of the patients died the next day. The Territorial Board of Health has established rigid quarantine, and it is hoped that by these precautionary measures further spread of the infection may be prevented.

DIPHTHERIA AT BALTIMORE. — Report from Baltimore, Md., states that there has been an outbreak of diphtheria at the Johns Hopkins Hospital in that city. On Feb. 25, there were said to be 39 cases in the hospital, of whom 12 were medical students, 10 nurses, 2 graduate physicians, 1 employee and 14 ward patients; on Feb. 26, the appearance of 4 more cases was reported; the last report gives 75 cases. The entire hospital has been quarantined and the Johns Hopkins Medical School has been ordered closed until further notice.

APPOINTMENT OF MEDICAL SUPERINTENDENT, JOHNS HOPKINS HOSPITAL. — Dr. Winford H. Smith has resigned as medical superintendent of Bellevue and Allied Hospitals, an office he has held for the past two years, to accept the same position at the Johns Hopkins Hospital, Baltimore. At the latter he succeeds Dr. H. M. Hurd, who has been connected with the hospital for some twenty-five years and who will still remain a member of its medical board. Dr. Smith was graduated from Johns Hopkins University in 1903, and from 1906 to 1909 was medical superintendent of the Hartford General Hospital.

EXTENT OF OPIUM SMUGGLING IN THE UNITED STATES. — During the past few months we have noted from time to time seizures of smuggled opium by federal officers in various parts of the country. Report from Washington, D. C., states that since the beginning of the present campaign against the illegal opium traffic over fifty raids have been made and that there has been seized a total of four tons of smuggled opium having a commercial value of $100,000.

NEWS OF THE ORIENTAL EPIDEMIC OF PLAGUE. — Reports during the past week seem to indicate an abatement of the bubonic plague epidemic in China and Manchuria. It is said that sanitary measures are being more strictly and generally enforced. European passengers on the Trans-Siberian railway, however, are now permitted to enter Pekin without quarantine.

Report from Berlin states that the German government has ordered medical inspection of all ships and crews arriving in that country from Chinese ports. The United States government has also established special precautions to prevent the entrance of the infection into the Philippine Islands, where there has been no case of bubonic plague for over three years.

### BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Feb. 21, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 40, scarlatina 36, typhoid fever 3, measles 101, smallpox 0, tuberculosis 69.

The death-rate of the reported deaths for the week ending Feb. 21, 1911, was 20.13.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, Feb. 25, 1911, was 280, against 279 the corresponding week of last year, showing an increase of 1 death, and making the death-rate for the week, 21.19. Of this number 151 were males and 129 were females; 275 were white and 5 colored; 150 were born in the United States, 119 in foreign countries and 11 unknown; 51 were of American parentage, 196 of foreign parentage and 33 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 42 cases and 5 deaths; scarlatina, 33 cases and 3 deaths; typhoid fever, 3 cases and 1 death; measles, 70 cases and 0 deaths; tuberculosis, 57 cases and 18 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 51, whooping cough 4, heart disease 34, bronchitis 4. There were 30 deaths from violent causes. The number of children who died under one year was 41; the number under five years, 51. The number of persons who died over sixty years of age was 81. The deaths in public institutions were 118.

Measles at Portsmouth. — It is reported from Portsmouth, N. H., that there are at present over 300 cases of measles among children in that city, and that the public schools have been closed for a week in an effort to check the epidemic.

Conviction for Illegal Sale of Cocaine. — In the Boston Municipal Court last week an itinerant peddler, of Cambridge, Mass., was sentenced to three months' imprisonment for illegally selling cocaine. From this sentence he appealed.

A New Nurses Home in Woburn. — The new nurses' home of the Choate Memorial Hospital, Woburn, Mass., was opened last week for public inspection. The building, formerly a private residence, which has been completely remodeled and refurnished, contains a reception and lecture room, and will afford accommodation for the entire nursing staff of the hospital.

Industrial School Fair. — On Thursday and Friday of this week, March 2 and 3, is to be held at Hotel Somerset, Boston, the annual fair for the benefit of the Industrial School for Crippled and Deformed Children. The proceeds will be used to help towards defraying the running expenses of the institution.

Hospital Concerts for March. — It is announced that during the month of March, the concerts of the Boston Hospital Music Fund will be given as follows: On March 5, at the Helping Hand Home for Jewish Children, Roxbury; on March 12, at the United States Marine Hospital, Chelsea; on March 19, at the Kindergarten for the Blind, Jamaica Plain; on March 26, at the Home for Aged Colored Women, Boston.

Bequests to Hospitals. — The will of the late Sullivan Niles, of Cambridge, Mass., filed last week at East Combridge for probate, contains a bequest of $3,000 to the Cambridge Hospital.

The will of the late George W. Fifield, of Lowell, Mass., who died on Jan. 30, 1911, was allowed last week in the Middlesex Probate Court. It contains bequests of $20,000 each to St. John's Hospital, Lowell, and to the Lowell General Hospital.

Plans of the Forsyth Dental Infirmary. — The trustees of the Forsyth Dental Infirmary made public last week their tentative plans for the erection of the infirmary building. This will be located on a tract of land between Hemenway Street and the Fenway, part of which will be converted into a permanent park and playground. The building is to consist of three stories and two mezzanine floors, and will be equipped with the most approved facilities for all branches of dental work. The possibilities of service by such an institution to the community are very great, and it should do a work of great importance hitherto inevitably much neglected. Not only will it bring relief and prevent suffering for individuals, but it should become a center of research and a means not only of training in dentistry for many future practi-

tioners, but of education in dental and oral hygiene for coming generations.

MEDICAL INSPECTION OF SCHOOL CHILDREN IN BOSTON. — At a meeting last week of the Boston 1915 Health Conference, at the rooms of the Twentieth Century Club, Dr. Silas H. Ayer, who has recently resigned as chief school physician of Boston, called attention to the present unsatisfactory condition of medical inspection of school children in this city. His comments were in the line of similar criticisms made by Dr. David D. Scannell, formerly of the Boston School Committee, that the work of such inspection should be inadequate seems inevitable so long as the salary paid by the city to medical inspectors is too small to secure the devotion of a sufficient amount of time and energy by the physicians appointed. Dr. Ayer advocates the appointment of a single responsible chief for this work, with a suitable number of assistants adequately paid. Other addresses were made at the meeting by Dr. William B. Coues, Dr. Horace E. Marion, Dr. Cleaveland Floyd and by Dr. Durgin, chairman of the Boston Board of Health.

THE INSTRUCTIVE DISTRICT NURSING ASSOCIATION. — The twenty-fifth annual meeting of the Instructive District Nursing Association was held in Boston on Feb. 23. The annual report of the association, presented by the secretary, showed that during the past year 30 nurses have graduated from this practical training-school. The association employed during the year 47 nurses, who made 112,912 visits on 10,313 patients. Of these, 4,054 were visits for observation and instruction of 1,834 pregnant women. Miss Martha H. Stark, the superintendent of staff nurses, described the details of this and other aspects of the work. Other addresses were made by Miss Alice Higgins, general secretary of the Associated Charities of Boston, and by Dr. Howard T. Swain, of the Boston Lying-In Hospital, who particularly emphasized the value of the work done by the nurses in connection with the out-patient department of the hospital. The following officers of the association were elected for the ensuing year: President, Mrs. Katherine B. Codman. Vice-Presidents, Mrs. Helen Mumford and Miss Emily G. Denny. Secretary, Miss Gertrude W. Peabody.

## NEW YORK.

A LUTHERAN HOSPITAL. — A society has just been formed for the purpose of erecting and maintaining in the upper part of the Borough of Manhattan a fully equipped Lutheran hospital. For the past three years a medical service has been carried on by the Lutherans, and last year 1,200 calls were made and 364 patients treated.

CONGRESS SPRING PARK, SARATOGA, A STATE RESERVATION. — The famous Congress Spring Park, Saratoga, which has been in existence under private ownership for over a hundred years, has now been purchased by the village of Saratoga Springs for $100,000, and will be added to the New York state reservation. Some time ago a bond issue of $250,000 was voted by the taxpayers of the village, the proceeds to be devoted to co-operation with the state in the establishment of the reservation.

APPOINTMENTS — BEQUESTS. — Dr. Theodore Caldwell Janeway, son of the late Dr. Edward G. Janeway, who is Bard professor of the practice of medicine at Columbia University, and is now attending physician to St. Luke's and the City Hospitals, has just been appointed attending physician to the Presbyterian Hospital, in the place of Dr. W. Gilman Thompson, resigned. This appointment, it is stated, was made at the desire of the trustees of Columbia University in accordance with the recent tentative agreement between these and the hospital. Another new appointment at the Presbyterian is that of Dr. William G. MacCallum, professor of pathology at Columbia University, to the position of pathologist, in the place of Dr. E. L. Opie. This hospital has just been left, from the estate of the late Melville DeWolf, a bequest of $5,000 for the endowment of a free bed for children. Mr. DeWolf, who died on Feb. 9, also bequeathed $5,000 to Roosevelt Hospital for a free bed.

DEATH-RATE. — Dr. Guilfoy, registrar of records in the City Health Department, has made a report in which he states that if the average death-rate in New York during the decade 1900 to 1909, inclusive, had been maintained during 1910, no less than 13,066 more persons than was the case would have died, a favorable result which he attributes largely to increased sanitary control over disease. There were 2,203 fewer deaths than the ten-year average from pneumonia, 1,840 from tuberculosis, and 1,317 from Bright's disease and acute nephritis. His analysis of the figures shows that 6,000 lives of children under five years were saved, and 6,500 of persons between five and sixty-five years old, but less than five hundred above sixty-five. Among the diseases in which there were increases, instead of

decreases, in the number of deaths were cancer, organic disease of the heart, and cirrhosis of the liver. Appendicitis also showed an increase in mortality, probably because more cases, formerly classified under acute indigestion, were attributed to this cause.

## Current Literature.

MEDICAL RECORD.

FEB. 4, 1911.

1. SATTERTHWAITE, T. E. *Electrocardiograms and Their Significance.*
2. *WELLS, J. G., AND LEVY, L. H. *The Use of Electricity in Chronic Disorders of the Stomach.*
3. GRAY, F. D. *Direct Transfusion.*
4. LERCH, O. *On Percussion and on Percussion of the Kidneys.*
5. WEIDLER, W. B. *Keratitis ex Acne Rosacea.*
6. DANNREUTHER, W. T. *The Recognition and Treatment of Gonorrheal Urethritis and Cystitis in Women.*
7. FAUGHT, F. A. *The Clinical Value of Blood-Pressure Studies.*

2. Wells and Levy report benefit from the use of electricity in six stomach cases — two of gastralgia, one of nervous regurgitation, two of chronic gastritis and one of gastric ulcer with atony. The negative electrode was placed in the stomach by means of a stomach tube and the positive electrode was applied to the abdomen. The writers consider electricity indicated in any of the chronic gastric disorders. For disturbances of secretion and in functional conditions with pain, galvanism is best, while in disturbed motor conditions faradism gives better results. [L. D. C.]

FEB. 11, 1911.

1. WYETH, J. A. *Address of the Retiring President of the New York Academy of Medicine.*
2. POLK, W. M. *Inaugural Address of the President of the New York Academy of Medicine.*
3. BOVAIRD, D., JR. *Transfusion of Blood in Three Cases of Pernicious Anemia.*
4. BEER, E. *Direct Inspection of the Rectum and Sigmoid Colon.*
5. CARTER, D. *Inebriety: Its Common-Sense Consideration with a View of Eliciting the Cure, Prevention, Suppression and Final Eradication.*
6. NAMMACK, C. E. *Is Sterilization of the Habitual Criminal Justifiable?*
7. *FREUND, M. H. *Asphyxia of the Newborn Relieved by Placental Atration.*
8. HANCOCK, C. R. *Appendectomy with Cocaine Analgesia: Report of Seven Cases.*

7. Freund reports a case of asphyxia neonatorum successfully treated by placental atration. Immediately after the birth of the child the placenta was manually loosened and delivered. The baby was placed in a basin of warm water, the placenta being held maternal surface upward, exposed to the air. Respiration was maintained in this way for thirty-five minutes. Whenever the child became cyanosed the turning of a stream of oxygen on to the maternal surface of the placenta brought about immediate recovery of color, and the pulse improved in quality. After thirty-five minutes the child began to cry normally and the cord was cut. [L. D. C.]

FEB. 18, 1911.

1. CHAPIN, H. D. *The Proper Management of Foundlings and Neglected Infants.*
2. LESSYNSKY, W. M. *Syphilis and the Nervous System with Remarks on the Wassermann Test and "Salvarsan."*
3. RONGY, A. J. *Primary Sterility in Women. A Study Based on 120 Cases.*
4. MAYER, E. E. *Epidemic Poliomyelitis.*
5. KANSTOROOM, D. S. *A Theory of the Etiology of Trachoma.*
6. FAUGHT, F. A. *An Improvement in Audiometers.*

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

FEB. 18, 1911.

1. COFFEY, R. C. *Plication of the Round and Anterior Fold of the Broad Ligament on the Anterior Surface of the Uterus for Retrodisplacement.*
2. NOYES, F. B. *Relation of the Teeth to the Development of the Jaws and Face.*
3. *ROSENOWITCH, L. G. *Electric Analgesia and Electric Resuscitation after Heart Failure under Chloroform or Electrocution.*
4. BALDY, J. M. *Operation for Retrodisplacement of the Uterus.*
5. GILLMAN, D. T. *Round Ligament Ventrosuspension of the Uterus.*
6. DUDLEY, E. C. *Evolution of the Surgical Treatment of Retrodeviations of the Uterus.*
7. LENNING, F. A. *The Discharge of Lunatics by Habeas Corpus Proceedings.*
8. *NICHOLS, H. J. *Salvarsan and Sodium Cacodylate.*
9. *OSGOOD, R. B., AND LUCAS, W. P. *Transmission Experiments with the Virus of Poliomyelitis.*
10. *GILBRIDE, J. J. *Functions of the Stomach in Diabetes Mellitus, with Special Reference to the Determination of Pepsin.*
11. *COBURN, R. C. *Advantages of Nitrous Oxide-Oxygen Anesthesia, Especially in Connection with Ultimate Recovery.*
12. MITCHELL, O. W. H. *Primary Sarcoma of the Stomach with Autopsy Findings.*
13. MONTGOMERY, D. W. *Administration of Salvarsan.*
14. LAMBERT, A. *Treatment of Drug Addiction.*
15. ORMSBY, O. S. *A Group of Syphilitic Patients Treated with Salvarsan.*
16. JOHNSON, C. C. *A Simple Support for Thigh Elastic Stockings.*
17. WILLARD, W. P. *A Case of Nephrolithiasis.*

3. Robinowitch, using rhythmic excitation of about thirty volts of electricity, has been able to resuscitate dogs apparently dead from electrocution, over-etherization and over-chloroformisation, after the elapse of from one to five minutes and also demonstrated the value of this method in resuscitating a deeply cyanosed patient dying of morphine poisoning.

8. Nichols finds experimentally that sodium cacodylate has no spirillicidal action in rabbits infected with spirochete pallida when tested by Ehrlich and Hata's technic. Treatment with this drug does not interfere with a subsequent treatment with salvarsan.

9. Osgood and Lucas, experimenting with poliomyelitis virus on monkeys, have demonstrated that it was possible to transmit from monkey to monkey a typical poliomyelitis from the filtrate of the nasopharyngeal mucosa of two monkeys dying without other discoverable infections respectively six weeks and five and one-half months after the acute stage of the disease. In one case they were able to transmit the disease from the nasopharyngeal mucosa of a monkey dying in the acute stage. It was not found possible to transmit the disease from monkey to monkey by inter-cerebral inoculation of the cord and brain of those recovered subjects or from filtrates of the nasopharyngeal mucosa of a monkey in apparent good health, which had received a previous inter-cerebral inoculation of an active virus with only questionable prodromal symptoms but which had lived in closest contact with monkeys in the acute stage of the disease. These observations indicate that the virus of poliomyelitis can persist in a viable and infectious state in the nasopharyngeal mucosa in monkeys for several months after the acute period of paralysis has passed, and for a greater period of time than it survives in the central nervous system. The authors noted no case of transmission from monkey to monkey except by direct inoculation, although closest association with subjects in the acute stage has been maintained both by contact and the use of the same feeding utensils and materials.

10. Gilbride estimates that the secretion of pepsin in diabetes mellitus is frequently reduced and sometimes absent. Also gastric motility is usually increased and gastric secretion is frequently diminished.

11. Coburn quotes various experimenters who have found that so short an anesthesia with ether as fifteen

minutes causes a definite and demonstrable anemia. This does not improve often till after the fifth day and must retard convalescence even in favorable cases, and in critical cases may be the determining factor in producing a fatal termination. Chloroform produces even more destructive changes on the blood, while its degenerative action on the liver is well known. Ether increases the toxemia arising from infection. Recent investigation shows that this is due to the fact that ether impedes the functional activity of the leucocytes; in other words, lessens the patient's resisting power against the infection. Nitrous-oxide and oxygen, on the other hand, produce no such deleterious effect. Coburn makes a strong plea for the more general use of this latter anesthetic agent. [E. H. R.]

BULLETIN OF THE JOHNS HOPKINS HOSPITAL.

FEBRUARY, 1911.

1. CHIARI, H. *Lectures on the Herter Foundation.*
2. MAGNUS-LEVY, A. *On Diabetic Acidosis.*
3. FORD, W. W. *Some Observations on the Bacteriology of the Baltimore City Water.*
4. KINGSLEY, C. R. *A Case of Congenital Deformities (Patent Ductus Botalli: Absence of Left Kidney and Chronic Peripheral Edema).*
5. SHARPE, N. W. *Transverse Fracture of the Body of the Ischium in 1893; Terminal Displacement in 1902; Diagnosticated in 1909.*
6. WARFIELD, M. *Peri-Tonsillar Abscess.*

JOURNAL OF INFECTIOUS DISEASES.

JAN. 3, 1911.

1. *ANDERSON AND MCCLINTIC. *A Method for the Bacteriological Standardization of Disinfectants.*
2. PHELPS. *The Application of Certain Laws of Physical Chemistry in the Standardization of Disinfectants.*
3. GURD. *Upon the Presence of Suppuration in the Tubercles of Leprosy.*
4. MCCOY. *The Susceptibility to Plague of the Weasel, the Chipmunk and the Pocket Gopher.*
5. HARRIS AND SHACKELL. *The Effect of Vacuum Desiccation on the Virus of Rabies, with Remarks on a New Method.*
6. MILLER. *On the Administration of Diphtheria Toxin in a Collodion Sac.*
7. WELLS AND OSBORN. *The Biological Reactions of the Vegetable Proteins. 1. Anaphylaxis.*

1. The deodorising power of a disinfectant is often taken as an index of its germicidal efficiency. This gives rise to a sense of false security. The authors describe the various methods of bacteriological standardization of disinfectants, the best of which are fundamentally the same. This method consists of a comparison with the efficiency of carbolic acid, from point of view both of time and dilution. The authors have introduced various modifications of what they consider the best method. It is essential to have

(1) Cultures exposed to a uniform temperature.

(2) Cultures measured carefully and with uniformity.

(3) Subcultures prepared from measured amount of exposed fluid.

(4) Subcultures prepared on most suitable media.

The coefficient is the mean between the strength and the time coefficients; i. e., the figure representing the degree of dilution of the weakest strength of the disinfectant that kills within two and one-half minutes is divided by the figure representing the degree of dilution of the weakest strength of the phenol control that kills within the same time. The same is done for the weakest strength that kills in fifteen minutes. The mean of the two is the coefficient.

From this can be determined the cost per unit of efficiency, the knowledge of which would be of great aid in practice. [L. H. S.]

ANNALS OF SURGERY.

JANUARY, 1911.

1. *MATAS, R. *Testing the Efficiency of the Collateral Circulation as a Preliminary to the Occlusion of the Greatest Surgical Arteries.*
2. SCHMITT, A. E. *Anatomical and Surgical Desiderata in the Exposure and Removal of the Pituitary Gland.*
3. TURCK, R. C. *The Treatment of X-Ray Ulcer.*
4. FAUNTLEROY, M. A. *Posterior Gastro-Enterostomy, Three Years after Anterior Gastro-Enterostomy.*
5. WARE, M. W. *Non-Prostatic Urinary Retention of the Senile Bladder.*
6. *SIMMONS, C. C. *Bone Abscess Treated with Moorhof's Bone Wax.*
7. *THOMAS, T. T. *Laceration of the Axillary Portion of the Capsule of the Shoulder-Joint as a Factor in the Etiology of Traumatic Combined Paralysis of the Upper Extremity.*
8. GIBSON, C. L. *Disinfection of the Skin by Tincture of Iodine.*
9. MOSCHCOWITZ, A. V. *Dry Iodine Catgut.*

1. Before operating upon an aneurysm of any large vessel, the efficiency of the collateral circulation should be known. With the knowledge of a good collateral circulation, an obliterative procedure, if unavoidably necessary, may be safely undertaken. The determination is obviously less difficult in the extremities than in the trunk or neck. For the extremities Matas describes tests which he has discarded. He then presents a modification of Moszkowicz's hyperemia test which he has found both simple and reliable. The test requires an apparatus to compress the artery above the aneurysm. For this purpose Matas has been using the Massachusetts Hospital compressor (description and picture given). In a case of aneurysm of the brachial artery, the compressor is applied to the artery above the aneurysm and tightened until the aneurysm is "stilled" and no pulsation can be detected in the radial and ulnar arteries at the wrist. The color and temperature of the arm below the compressor are observed. The compressor is removed, the arm elevated to drain all excess of venous blood, an elastic (Esmarch) bandage applied from the finger tips to the upper pole of the aneurysm, the compressor reapplied and the aneurysm kept stilled for five to eight minutes (inversely proportional to the age of the patient) and the bandage quickly removed with the compressor *in situ*. In case the collateral circulation is efficient, a hyperemic wave spreads from the compressor throughout the arm to the tips of the fingers, the blush persists a while, then fades. The rate of the wave and the duration of the blush are variable. In case the collateral circulation is not efficient, the wave will stop at some point between the compressor and the finger tips. The parts below this level will then be of waxy and cadaveric pallor. An appreciable wave or blush may not occur. A pink color, which can be made paler by pressure, however, indicates some circulation. Only an absolute waxy pallor indicates ischemia and ultimate death. If such pallor persists at the end of an hour, despite hot-air baths and massage, it is justifiable to conclude that the collateral circulation does not warrant obliteration of the parent artery. The possibility of embolism upon release of the compression is considered and measures to lessen the coagulability of the blood suggested. The second part of the paper is devoted to the determination of the efficiency of the collateral circulation of large arteries of the trunk and neck, especially the carotids. One hundred and sixty-eight experiments have been performed on the femoral and carotid arteries of dogs. The method may be called the immediate and total prophylactic occlusion of arteries. Aluminum bands (description and pictures given) have been found best. All vessels so clamped stood compression seventy-two hours without apparent microscopic changes in the intima.

6. After describing the preparation of Moorhof's bone wax, summarising the results from its use obtained by its originator, Meurer, and Silbermark, and after describing the technic of its use, Simmons gives abstracts of five cases of bone abscess in which he employed the wax. All the cases were operated upon over one and one-half years ago and the end results are given. The wounds of the only cases closed without drainage (3) healed by primary union with the subsequent formation of sinus. The cavities in all cases were evidently rendered sterile by the cleaning process and the dressings were easy and painless. The results of four cases may be called perfect. X-rays of two show the cavities filled with normal bone.

7. Thomas believes many cases of traumatic combined paralysis of the arm are due to laceration of the axillary portion of the capsule of the shoulder-joint and not to lesions of the brachial plexus or to inflammation of the

subacromial bursa. His argument is based upon personal cases and citations from the literature, clinical and post-mortem. Forced abduction of the arm may tear the axillary portion of the capsule of the shoulder-joint. Dislocation of the arm may result and persist. The arm in some instances may immediately drop to the side, from spontaneous reduction, or from simple sprain (tear of the capsule without dislocation). Extravasated blood, lymph and synovial fluid from torn vessels and joint capsule fall by gravity into the loose tissue of the axilla and are sufficiently irritating to produce perineuritis and neuritis of some of the axillary nerves. Coincident with this there occurs contracture of the capsule at the site of the rent due to its healing. There results scapulo-humeral limitation of motion and atrophy of those muscles of the shoulder and arm whose innervation has been impaired. The circumflex nerve, owing to its close relation to the joint capsule, is frequently inflamed, occasionally the median, ulnar and other nerves. Thomas believes that certain cases of infantile obstetrical paralysis have a similar pathology. A personal case and an analysis of the signs and end results of reported cases are used to support his view. The dislocation with spontaneous reduction or the sprain may be posterior as well as anterior. The pathology of the palsy is the same. Thomas suggests that the same type of injury may underlie some cases of craft palsy. A suggestive case is presented. The acute stage of axillary tear of the capsule without dislocation should be treated for two weeks by immobilization of the arm in full abduction (Codman splint or light plaster) to prevent contraction of the capsule. The arm is then brought gradually to the side and massage and passive motion instituted to aid absorption of inflammatory material and release adhesions. Electrical stimulation is advocated. The chronic stage is best treated by breaking up the resistence under an anesthetic and then employing measures to prevent a recontraction of torn tissues. Operations on the brachial plexus, its roots or its branches, should be deferred until a paralysis from inclusion of the nerves in cicatricial tissue has been eliminated. [T. W. H.]

### The Lancet.

#### Jan. 21, 1911.

1. Hosford, J. S. *A Lecture on Some Points in the Diagnosis of Orbital Disease.*
2. Johnson, A. E. *Transverse Fractures of the Patella without Separation of the Fragments.*
3. *Weber, F. P., and Dorner, G. *A Case of Congenital Pulmonary Stenosis, with Special Consideration of the Nature of the Secondary Blood Changes.*
4. Bayly, H. W. *The Intravenous Method of Treatment of Syphilis with Salvarsan ("606") with a Convenient Apparatus for Such Administration.*
5. Maxwell, W. H. *"Nodular" Fibromyositis, an Every-Day Affection and Its Identity with So-Called Chronic Muscular Rheumatism.*
6. Clark, G. H. *The Influence of Chloroform when Repeatedly Administered in Small Doses.*

3. Weber and Dorner present a case of congenital pulmonary stenosis with a careful and interesting study of the accompanying blood changes. The blood showed 10,110,000 reds, 10,275 whites and a hemoglobin of 200% according to the Sahli method. The differential count was normal. Three normoblasts were seen. The viscosity of the blood was greatly in excess of the normal, the coagulability less than normal, the coagulation time being fifteen minutes by the Wright method. This polycythemia they believe to be a conservative one on the part of the bone marrow in order to make up for the diminished oxygenation on account of the congenital heart lesion. [J. B. H.]

#### Jan. 28, 1911.

1. *Osler, W. *An Address on the Hospital Unit in University Work.*
2. Garrod, A. E. *On Auscultation of Joints.*
3. Pringle, S. *Transperitoneal Cystotomy for Tumors of the Bladder, with Report of a Case.*
4. Alexander, W. *Puerperal Convulsions, or Eclampsia at the Liverpool Workhouse Hospital.*
5. *Riviere, C. *The Rôle of Auto-Inoculation in Medicine; a Plea for Its Rational Extension.*
6. Williamson, R. T. *Cerebral Tumor Affecting the Under Surface of the Corpus Callosum and Filling the Right Ventricle.*
7. Evans, J. J. W. *Subluxation of the Knee.*
8. Mitchell, P. A. *Atonic Dilatation of the Stomach.*
9. Menta, D. H. *Power of Speech in Cut Throat.*

1. Osler describes the German system of combining hospital and medical school facilities in what he calls the "hospital unit." He describes the part each factor in the unit should play and urges the adoption of this system in England and America.

5. Riviere urges a more extended use of auto-inoculation in medicine. He first describes the ordinary empirical treatment of many simple conditions by heat, poultices, irritants and counterirritants, all of which he claims are merely examples of bringing about an auto-inoculation. He then goes on to describe how these principles can be further applied to certain respiratory conditions and, in particular, bronchitis. [J. B. H.]

### British Medical Journal.

#### Jan. 28, 1911.

1. Boyce, R. *The History of Yellow Fever in West Africa.*
2. Murray, H. L. *Puerperal Eclampsia: A Comparison with Venous Poisoning and a Suggestion for Treatment following Therefrom.*
3. Freeland, J. R., and Solomons, B. A. H. *Scopolamine-Morphine Anesthesia in Labor.*
4. Routh, A. *Cæsarean Section for Dystocia due to Ventrifixation of the Uterus.*
5. Spencer, W. G. *Absence of the Fallopian Tubes and of Menstruation, associated with Recurrent Peritonitis.*
6. Hendrie, A. S. *Case of Prolapse of the Inverted Uterus during Labor.*
7. Cripps, H. *The Treatment of Rectal Cancer.*
8. Bannatyne, G. A., and Lindsay, J. *A Note on the Treatment of Rheumatic Arthritis by Vaccines.*
9. Griffiths, J. *The Proposed Coroner's Bill.*
10. Myers, C. S. *The Pitfalls of "Mental Tests."*

### Deutsche Medizinische Wochenschrift. No. 4.

#### Jan. 26, 1911.

1. Baginsky, A. *Cause of Epidemic Poliomyelitis.*
2. *Friedrichs. *Hemoglobin Nutrient Media for Cholera according to Esch.*
3. *Siegheim. *Syphilis of the Stomach.*
4. Kirchheim. *Clinical Course and Pathological Findings in Two Cases of Tertiary Febrile Hepatic Syphilis.*
5. Weichardt, W. *A New Serological Method for Diagnosis of Syphilis. Elaboration of an Article by Dr. Seiffert in No. 50, 1910, of This Journal.*
6. Paulicke, E., and Wutscher, L. *The Study of Myeloid Chloroma.*
7. Herxheimer. *Primary Typhilitis.*
8. Buschke, A. *Further Observations on the Physiological Effect of Thallium.*
9. Hess, O. *A Case of Hyperkeratosis with Extensive Bark-Like Formation after the Use of a Lubricant Oil.*
10. Heinrich, E. *Essay on Question of Traumatic Sarcoma.*
11. Suoy, F. *Sodium Hyposulfurosum as an Iodide Wash.*

2. Friedrichs describes the new hemoglobin agar media for the detection of cholera germs according to Esch's plan and compares it with other types of media. He considers that this medium and the alkaline blood agar of Dieudonné are superior to the other types of media.

3. Siegheim takes up at length the question of gastric syphilis. It is extremely rare, occurring in not more than 1.5%, if as often. It may occur as an ulceration or as a tumor which may cause pyloric stenosis. The early diagnosis is a very essential feature as the ulcer may go on to perforation, or scar tissue stenosis of the pylorus may occur. The treatment is like that of other forms of syphilis, only using some other route of entry of the drugs if vomiting or ulcer signs occur. The Wassermann test is an aid in diagnosis and in the length of time to continue treatment. [C. F., Jr.

BERLINER KLINISCHE WOCHENSCHRIFT. No. 5.

JAN. 30, 1911.

1. HIS, W. *The Treatment of Gout and Rheumatism with Radium.*
2. *EINHORN, M. *Pylorospasm.*
3. TORNAI, J. *Artificial Diminution of the Circulation as an Efficient Therapeutic Measure.*
4. KLOPSTOCK, F. *Cirrhosis of the Liver.*
5. PELTZSOHN, S. *Experiences with Subcutaneous Arthrodesis.*
6. STURMANN. *Total Enucleation of the Pharyngeal Tonsils.*
7. BARCHKE, A. *The Transmission of Sarcoma, in Rats, and Carcinoma, in Mice, to Newborn Animals.*
8. LEBER, A., AND V. PROWAZEK, S. *A New Infectious Disease of the Conjunctiva.* (*Epitheliosis Desquamativa Conjunctivæ.*)
9. CATAPANO, E. *Mydriatic Action of Organ Extracts and Fluids.*
10. NAGEL, W. *Medical Sketches from America* (*Rochester*).
11. TUGENDREICH, G. *A Reaction to Differentiate Human and Cow's Milk.*

2. The author describes in fullest detail in an article illustrated by diagrams and x-ray plates his treatment for this peculiar gastric disturbance. He quotes from a series of nine cases where he has used his dilator with satisfactory results. The instrument resembles in the main the tube used for washing out the duodenum, save in this respect that a balloon is attached to the tip. This balloon, uninflated, is swallowed and allowed to remain for several hours or, better still, over night. Then it is found to have passed through the pylorus and it is then drawn back into the pylorus and inflated. Einhorn feels that the results warrant its use and offer a hopeful solution of this difficult problem. [J. J. H.]

REVUE DE MÉDECINE.

JANUARY, 1911.

1. BERNHEIM. *Prolonged Fever in Certain Infectious Diseases.*
2. LABBÉ. *Contribution to the Study of the Metabolism of the Ammonia Compounds.*
3. *VAN DEN BERGH, A. A. H. *Hemolytic Jaundice with Hemoglobinuric Crises.*

3. The author gives a detailed account of an interesting case of jaundice which was associated with anemia and attacks of hemoglobinuria. The urine contained no bile pigments, but was always rich in urobilin. The resistance of the red cells was normal, and it was with the greatest difficulty that any lytic action of the serum could be demonstrated. This was produced at last, after a long series of experiments, by the exposure of the material to carbolic acid at a temperature of 37° C. The attacks of hemoglobinuria varied in frequency and intensity, but when at all marked in severity, were associated with an aggravation of the anemia and the jaundice. [J. H. S.]

REVUE DE CHIRURGIE.

JANUARY, 1911.

1. *CURTIS, F., AND LE FORT, R. *Tumor of the Sacro-Coccygeal Region in an Adult.*
2. *MONOD, C., AND VANVERTS, J. *The Treatment of Arterial and Arteriovenous Hematomata.* (To be continued.)
3. *DUBREUILH, W., AND NOËL, P. *Cutaneous Graft by Total Transplantation of a Non-Pedunculated Flap.*

1. The authors report a case of angiosarcoma of perithelial type originating from Luschka's gland, and collect four similar cases from the literature.

2. Under this term the authors describe what are commonly called false aneurysms, and present the documents of a number of collected cases, with remarks and comments.

3. After a valuable synopsis of the history of skin-grafting, the authors describe the technic of total transplantation, and report a series of ten cases in which they successfully employed this method. [R. M. G.]

IL POLICLINICO.

DECEMBER, 1910.

MEDICAL SECTION.

1. ROSSO, I. G. *The Genesis of Renal Casts.*
2. *CARDONE, G. *The Mechanism of the Vasoconstrictive Action of Adrenalin.*
3. FULCI, F. *A Case of Primary Multiple Malignant Lymphomata of the Jejunum.*

2. Cardone performed elaborate experiments on dogs to determine the nature of the vasoconstrictive action of adrenalin. The effects of this drug and some of its antagonists were studied on artificial circulation through an isolated kidney. The writer concludes that adrenalin as a vasoconstrictor is not a nervous, but exclusively a muscular agent. [L. D. C.]

SURGICAL SECTION.

1. DELLA VEDOVA, T. *The Radical Cure and the Early Diagnosis of Laryngeal Cancer.*
2. *MARAGLIANO, D. *Histopathology of Partial Central Nerve Implantations.*
3. MARCHETTI, O. *A Modification of Krause's Cholecystenterostomy.*
4. GUSSIO, S. *Contribution to the Case Records and Symptomatology of Parathyroid Tumors.* (Conclusion.)

2. Under this terminology, Maragliano describes a procedure by which a slip, of varying size, from a healthy nerve, with which it remains connected, is implanted into the peripheral portion of a severed or otherwise paralyzed nerve whose function it is desired to restore. He reports a series of animal experiments in which this operation was successfully performed, and from which he concludes that to avoid degeneration the slip for implantation should be not less than half the caliber of the nerve from which it is diverted, should be short, and should traverse a straight, not devious, course; and that suppuration is the most serious complication of such procedures, since it may lead to degeneration and complete motor and sensory paralysis of the sound nerve. [R. M. G.]

## Obituary.

### JAMES CROWLEY DONOGHUE, M.D.

DR. JAMES CROWLEY DONOGHUE, of Boston, who died on Feb. 26 at Georgetown, Mass., was born in Georgetown on Oct. 9, 1864. In 1897 he received the degree of M.D., *cum laude*, from the Harvard Medical School. In 1896 and 1897 he served as medical house-officer at the Massachusetts General Hospital. He was for a time assistant in histology at the Harvard Medical School, and had recently been appointed instructor in hematology at the Tufts Medical School. Dr. Donoghue was formerly a visiting physician at St. Mary's Infant Asylum, and for the past twelve years had served as physician of the Boston Dispensary. He was a Fellow of The Massachusetts Medical Society, a member of the Boston Society of Medical Sciences and of the Harvard Medical Alumni Association. He is survived by his parents and by two brothers.

Dr. Donoghue was a good physician, a hard worker, a helpful teacher, a kind and faithful friend. In his own labors and troubles he never forgot others whom he might be able to assist, and gave to them freely of his time, his encouragement and his friendship. His untimely death will be sincerely lamented by many who thus had come to know and care for him and to appreciate and esteem his character.

## Miscellany.

### MASSACHUSETTS TUBERCULOSIS CONFERENCE.

On Friday of this week, March 3, the third Massachusetts Conference on Tuberculosis is to be held in Boston, at the rooms of the Twentieth Century Club, 3 Joy Street. The purpose of this conference, which was instituted two years ago, is to bring together, for purposes of mutual discussion and study, all those who are interested in the various problems of the work against tuberculosis in this state. The program of papers arranged for the present meeting is as follows:

11 A.M. "Tuberculosis in Children," by Dr. George S. C. Badger, of Boston.

2.30 P.M. "Outline of the Report of the Commission to Investigate and Report upon a System of Caring for Tubercular Patients," by Dr. Arthur T. Cabot, chairman of the trustees of the Massachusetts Hospitals for Consumptives.

"State Subvention to Municipal Hospitals," by Dr. Roger I. Lee, of Boston.

"Material Relief to Patients in Their Homes," by Dr. Julian A. Mead, of Watertown, and Mrs. Ada D. Sheffield, of Cambridge, a member of the State Board of Charity.

## Correspondence.

### "PROPOSED HOMEOPATHIC SANATORIA FOR CONSUMPTIVES."

Boston, Feb. 24, 1911.

*Mr. Editor:* Under the above heading, in your issue of Feb. 16, appeared an editorial which contained so many misstatements of facts that I feel sure, when you find that you have been misinformed, your sense of justice will impel you to admit to your columns a correction of them. Had it been merely a matter of opinion, no attempt would have been made to dispute it.

Your statement that in the sanatorium at Rutland, containing three hundred and fifty beds, there are two services of equal size, is not and never has been correct. The homeopathic service for quite a number of years has contained only about one third of all the patients, as the superintendent and other physicians and nurses and many hundreds of patients, past and present, would testify.

You say, "No patient at this institution has ever made a request for homeopathic treatment." The fact is that for about twelve years, the whole period of its existence since opening (except for a few months lately), an office was kept open in Boston for examinations for admission on two days in the week, and it was publicly advertised by circulars sent broadcast throughout the state that on one of these days those who desired to enter one service should apply, and on the other day those who preferred the other service. A great many, to my knowledge, were pleased to have this privilege of choice. To some, of course, it made no difference.

You say, "As a matter of fact, the treatment given on the two services is absolutely identical." That is a rather strong statement to be made by one who gets his information at second-hand. I will speak only of what I know from actual observation on the spot and can prove conclusively.

For nine years, beginning at its opening, I was in close touch and intimately connected with the work of the institution, as one of the two attending physicians, and as a result of that experience I am very sure that your statement is not true; and I am also sure that all the physicians on both services during that time know and would admit that it is not true. The homeopathic treatment there reflected the prevailing homeopathic treatment outside as nearly as the regular treatment reflected its outside representatives, and the differences between the two were very decided. What is more, we believe that our treatment was more efficacious. This refers only to treatment by drugs, which, of course, we in common with all educated physicians of to-day consider of secondary importance, as compared with hygiene. Naturally the hygienic treatment of the disease is the same on the two sides in every detail, and your very funny but ancient little joke about "administering food and fresh air in homeopathic doses" has no foundation in fact.

Nevertheless, we do believe in the helpfulness of drugs, given symptomatically, and do not despise their aid because some patients now and then get well without them.

You say, "Consumption is a disease treated not by drugs, but by diet and hygiene." I have a large acquaintance with regular physicians, some of them the very best, and I do not know a single one who would be willing to treat such patients entirely without the use of drugs, and I should have very little respect for him if he were so willing. This is so universally recognized that every modern regular textbook and monograph advocates them for the relief of symptoms in addition to hygiene. Kleb's new work devotes fifty-seven large pages to the discussion of the use of one of them alone — tuberculin. Even in spite of the wonderful advance in the treatment of the disease which we have made in recent years, we still fail so often that an honest man will welcome any aid within his reach. If now and then a case comes along with few if any marked symptoms, it may be allowable to trust it to hygiene alone, but the great majority of cases sooner or later need medicinal help. So your great men say and do, and who does not?

By the advice and consent of some of them, the state of Massachusetts has paid out each year for more than twelve years a considerable sum for drugs in its sanatorium at Rutland. Never has any one in the whole medical profession opposed this payment. The last Rutland report which has been printed states the cost of "medicines and hospital supplies" for the year ending Nov. 30, 1909, as $3,696.29. A large portion of this was for drugs alone. Now if it is wrong to treat consumption by drugs, as you say, is not this a pure robbery of the treasury of the state of Massachusetts? Are not the trustees and the physicians to whom they look for advice in matters medical implicated in this robbery? Are the rest of the physicians in the state blameless for not protesting against it? The regulars, therefore, and the homeopathists both prescribe medicine symptomatically in most cases of tuberculosis, but on different principles. At this late day it seems hardly necessary to answer your question as to how they differ.

You say, There is in Massachusetts only one private homeopathic sanatorium for tuberculosis. "Were there a genuine popular demand for such treatment, there would be other such private institutions."

Did you know that the number of *regular* private sanatoria in our state is almost as small, and that the homeopathic one you refer to treats almost as many patients, as all the rest put together? That is so.

You say that last fall we asked for representation in the three new hospitals at Lakeville, Westfield and North Reading, and that now that the trustees have offered us a position in each of these, we refuse them. The fact is we did not ask for this, and the stenographic report of the hearing will bear out this statement. Our appearance was a protest against the separation of the sexes at Rutland, which by sending the men patients elsewhere would deprive them of homeopathic treatment. We asked for a reconsideration of this vote on that and also on general grounds, and as an alternative we asked that we be given a sanatorium entirely to ourselves.

You also say that the homeopathists now ask the legislature for "two sanatoria placed under their entire control, representing, with their share of beds at Rutland, one half the public provision for consumption in the state."

This is not so. We do not want what you say. What we really ask for is only one small sanatorium of one

hundred and fifty beds, instead of our present service at Rutland of almost the same size. This is certainly not an extravagant demand. The present four state sanatoria contain altogether eight hundred beds, and if this legislature builds a new sanatorium, the total will be nine hundred and fifty, of which we ask for only one hundred and fifty, a proportion which is very different from the one half which you say we demand. This would have been obvious to you had you taken the trouble to read our petition to the legislature accompanying the bills. Those acquainted with legislative procedure know that where a petition admits of alternatives, each one of these should be framed as a bill or resolve in form to be passed, if acceptable. It does not mean that all are to be passed; nor does our General Court so understand it.

Respectfully,

HERBERT C. CLAPP, M.D.

## AN ANECDOTE ABOUT CHESELDEN.

BOSTON, Feb. 28, 1911.

*Mr. Editor:* The following anecdote of the famous surgeon, William Cheselden, may not be familiar to your readers.

Lady Suffolk (the celebrated mistress of King George II, of England) was affected with loss of hearing early in life. Cheselden, who was at the time in favor at court, persuaded her that he had hopes of being able to cure deafness by a certain operation on the tympanum, and offered to try the experiment on a condemned convict then in Newgate, who was deaf. If the convict could be pardoned, he would try it; and should he be successful, would perform the same operation on her ladyship. The countess procured the man's pardon, who was a cousin to Cheselden, who had feigned that pretended discovery to save his relation, and no more was heard of the experiment. The man saved his ear, too, but Cheselden was disgraced at court.

Very truly yours,

CHARLES G. CUMSTON, M.D.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, FEB. 18, 1911.

| CITIES. | Reported deaths in week. | Deaths under five years. | CITIES. | Reported deaths in week. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | 1,826 | 439 | Waltham | 6 | 1 |
| Chicago | 676 | 186 | Brookline | 8 | — |
| Philadelphia | — | — | Chicopee | 6 | 0 |
| St. Louis | — | — | Gloucester | 4 | 2 |
| Baltimore | — | — | Medford | 5 | — |
| Cleveland | — | — | North Adams | 5 | 2 |
| Buffalo | — | — | Northampton | 12 | 3 |
| Pittsburg | — | — | Beverly | 9 | 4 |
| Cincinnati | — | — | Revere | 6 | 1 |
| Milwaukee | — | — | Leominster | 4 | 1 |
| Washington | — | — | Attleboro | 6 | 1 |
| Providence | — | — | Westfield | 5 | 1 |
| Boston | 305 | 64 | Peabody | — | — |
| Worcester | 42 | 7 | Melrose | 3 | 0 |
| Fall River | 54 | 22 | Hyde Park | 3 | 0 |
| Lowell | 43 | 14 | Woburn | 3 | 0 |
| Cambridge | 37 | 14 | Newburyport | 5 | 2 |
| New Bedford | 31 | 10 | Gardner | 3 | 2 |
| Lynn | 25 | 3 | Marlboro | 7 | 1 |
| Springfield | 41 | 6 | Clinton | 3 | — |
| Lawrence | 29 | 11 | Milford | — | — |
| Somerville | 31 | 6 | Adams | 5 | 1 |
| Holyoke | 18 | 3 | Framingham | — | — |
| Brockton | 17 | 3 | Weymouth | — | — |
| Malden | 17 | 4 | Watertown | 9 | 0 |
| Haverhill | 19 | — | Southbridge | — | — |
| Salem | 16 | 4 | Plymouth | — | — |
| Newton | 9 | 2 | Webster | 1 | 1 |
| Fitchburg | 11 | 4 | Methuen | 3 | — |
| Taunton | 20 | 2 | Wakefield | 3 | — |
| Everett | 13 | — | Arlington | 1 | 1 |
| Quincy | — | — | Greenfield | 0 | — |
| Chelsea | 10 | 0 | Winthrop | 6 | — |
| Pittsfield | 12 | 3 | | | |

## SOCIETY NOTICES.

BOSTON MEDICAL LIBRARY IN CONJUNCTION WITH THE SUFFOLK DISTRICT MEDICAL SOCIETY. — Medical Section Meeting, John Ware Hall, Wednesday, March 15, 1911, at 8.15 P.M. "Some of the Effects of Intense Heat other than Heat Stroke and Heat Prostration." By David L. Edsall, M.D., Philadelphia. Discussion. Light refreshments after the meeting.

EDWIN A. LOCKE, M.D., *Secretary*, 311 Beacon St. HENRY JACKSON, M.D., *Chairman*, 289 Marlborough St.

THE AMERICAN SOCIETY OF MEDICAL SOCIOLOGY. — A meeting of this society will take place at 12 Mt. Morris Park West, New York, on Saturday, March 4, 1911, at 8.30 P.M. sharp. Program: 1. The Reason and Purpose of the American Society of Medical Sociology. 2. "The Rational Limitation of Offspring: the Most Important Immediate Step for the Betterment of the Human Race, from an Economic and Eugenic Standpoint." By William J. Robinson, M.D. 3. Discussion. The discussion will be opened by Dr. A. Jacobi, Dr. S. Adolphus Knopf, Dr. Heinrichstern, Dr. James P. Warbasse and will be continued by other members of the medical profession and the laity.

WM. J. ROBINSON, M.D., *President*. A. C. JACOBSON, M.D., *Secretary*.

NEW ENGLAND BRANCH, AMERICAN DERMATOLOGICAL ASSOCIATION. — There will be a meeting of the society on Tuesday, March 7, at the Boston Medical Library at 8.15 P.M. Paper by Dr. J. Bentley Squier, of New York, "Suprapubic Intra-urethral Enucleation of the Prostate." Discussion opened by Drs. P. Thorndike, B. Tenney, F. B. Lund, A. L. Chute and H. Cabot.

R. F. O'NEIL, M.D., *Secretary*, 370 Beacon St., Boston.

## RECENT DEATHS.

JAMES CROWLEY DONOGHUE, M.D., M.M.S.S., of Boston, died in Georgetown, Mass., Feb. 26, 1911, aged forty-six years.

DR. EMMET DENSMORE, a retired physician of New York, died in Florida, on Feb. 17. He was born at Blooming Valley, Pa., on May 19, 1837, and was graduated from the medical department of the University of the City of New York in 1858.

DR. ALBERT SIDNEY ASHMEAD, of New York, died at the Jefferson Hospital, Philadelphia, on Feb. 20, aged sixty-one years. He was a native of Philadelphia and was graduated from the medical department of the University of Pennsylvania in 1869.

DR. A. O. J. KELLY, of Philadelphia, died Thursday, Feb. 23, after a brief illness. An obituary notice will be published in a later issue.

DR. FLOYD PRESTON SHELDON, who died last week in New York City, was born at Rutland, Vt., in 1858. He studied medicine at the University of Michigan, from which he graduated in 1879. Since 1883 he had practiced ophthalmology in New York. He was a member of the American Ophthalmic Society, of the New York State and of the New York County Medical Society.

## BOOKS AND PAMPHLETS RECEIVED.

Annual Report of the Surgeon-General of the Public Health and Marine-Hospital Service of the United States for the Fiscal Year 1910. Washington, D. C. 1910.

The Practical Medicine Series. Gustavus P. Head, M.D., Charles L. Mix, M.D., Editors. Vol. X. Nervous and Mental Diseases. Chicago: The Year Book Publishers. 1910.

Undergraduate Proctology. By Dwight H. Murray, M.D. Syracuse, N. Y. Reprint.

The Literature of Medicine and Natural Science. January, 1911.

Makers of Man. By Charles J. Whitby, M.D. New York: Rebman Company. 1911.

A Handbook of Intestinal Surgery. By Leonard A. Bidwell, F.R.S.C. Wm. Wood & Co. 1911.

An Introduction to Surgery. By Rutherford Morison. Wm. Wood & Co. 1911.

Radium, its Physics and Therapeutics. By Dawson Turner. Wm. Wood & Co. 1911.

Syphilis, its Diagnosis and Treatment. By F. J. Lambkin. Wm. Wood & Co. 1911.

Public Health Bulletin No. 41. Studies upon Leprosy. By Donald H. Currie. Treasury Department, Washington, 1911.

Proceedings of the Fourth Annual Meeting of the Association of Life Insurance Presidents, Chicago, Ill., Dec. 9 and 10, 1910.

Education in Sexual Physiology and Hygiene. By Philip Zenner. The Robert Clarke Co. 1910.

## Original Articles.

# ON THE DEPENDENCE OF INTESTINAL INDIGESTION ON GASTRIC DISTURBANCES.

BY A. R. AUSTIN, M.D.,

*Director of the Clinical Chemistry Laboratory, Mt. Sinai Hospital.*

WHEN Von Noorden proves by carefully conducted experiments in metabolism that nutrition does not suffer in functional or certain organic diseases of the stomach provided that the patient takes sufficient food, since the pancreatic digestion compensates fully for the lack of gastric digestion, he does not take into account, or disregards, the extra burden thrown upon this previous form of digestion; the only exception which he makes, with regard to this maintenance of nutrition, is in those instances where fermentation is the cause of the loss of a large amount of the carbohydrate food in the stomach! We see it often stated that improperly prepared food which enters the intestine causes a catarrhal condition of the same without any absolute proof of this. In the very excellent résumé of this subject by A. Schmidt in the "Pathologie des Stoffwechsels" we find it stated that achylia gastrica or hypochlorhydria is accompanied by a deficiency in the pancreatic juice, while hyperacidity produces the opposite effect. Another author declares that the excessive hydrochloric acid of the increased acid chyme of the stomach, by the destruction of the trypsin, diminishes the activity of the pancreatic juice, with a corresponding emaciation of the patient. Hyperchlorhydria is also stated to produce a constipation which can only be relieved by alleviation of the former condition. The diarrheas which accompany achylias and hypochlorhydria are said to be due to lack of the bactericide action of the hydrochloric acid, but in a former article I have been able to show that the amount of hydrochloric acid in the gastric contents has no effect at least on the indol of the feces, one of the products of intestinal putrefaction of protein material, and this view has been substantiated by many others. Constipation may depend on hyperchlorhydria, but it is undoubtedly due to the better digestion and absorption of the food in the upper intestinal tract, because better prepared when entering the intestine and hence giving less opportunity for the activity of bacteria; in fact, Strassburger has shown that bacteria in feces are much less numerous under this condition, from the lack of nutriment, and not from the greater bactericide activity of the increased hydrochloric acid. As the absorption increases, the residue naturally grows less, and, as Schmidt has shown, constipation results. Apart from this, it is possible, but not proven, that with the increased hydrochloric acid of the gastric contents the neutral reaction of the latter is established so late in its course through the duodenum that its mucous membrane, unprotected against the assaults of an active gastric juice, though fully so against the pancreatic juice, yields before the former and the duodenal ulcer results. Dr. Codman has ventured the possibility that the pancreatic secretion makes its way upward and attacks those parts of the duodenum which are protected against the acid and pepsin, but not against the former; this I think is untenable because in gastro-enterostomy the duodenal content makes its way freely into the stomach, maintaining there continually an alkaline or neutral reaction, yet as far as one can learn from the literature of the subject, duodenal ulcer is not common under these conditions. Then we have the continuous secretion of gastric juice which is much more likely to cause duodenal ulcer, if the latter is due to an active peptic digestion, than the periodical discharge of highly active acid contents into the duodenum at meal time, because the action is more prolonged. So that we may divide our gastric cases for comparison into the achylias, the hyperchlorhydrias and the hypersecretion which exhaust the secretory anomalies for our purpose. As to the atonies or myasthenias and ectasias, due to benign pyloric obstruction, we may say, quoting still Schmidt's article, that "motor, disturbances, whether the delayed emptying of the stomach or the rapid discharge of its contents, have no effect upon the intestine or intestinal digestion and, if such changes of the latter are associated with these conditions of gastric motility, they are dependent upon the allied secretory anomalies, hyperchlorhydria (spasm of the pylorus and delayed discharge of contents) or achylia (rapid emptying). "As to the reverse action of disturbances of intestinal motility on gastric secretion we have the statement of Wiczkowski that diarrhea causes a diminution of the hydrochloric acid of the stomach, while constipation produces its increase, a statement with which Ebstein, from his own experience, cannot agree and which Schmidt doubts; apparently the conditions are associated, but which is primary is as difficult to establish as the precedent of the hen or the egg.

Now, how shall we classify the abnormalities of intestinal digestion, which we may compare with those just mentioned of gastric digestion? Naturally into the two groups of disturbances of secretion and disturbances of motility; but increased intestinal motility is much more dependent on nervous impulses than gastric, and we would make two equally gross errors if we made a coincident gastric disturbance responsible for it, or we made disturbed motility always dependent on actual pathological conditions of the intestine. Nothnagel has especially called attention to instances where diarrhea exists without any perceptible evidence of intestinal catarrh in the form of mucus, and still unabsorbed partially digested food fragments will be found which only with the presence of mucus may mean enteric catarrh. Another function often suffers in the intestinal canal which we are not obliged to consider seriously in the stomach, and that is absorption, a physiological process, again dependent upon complete digestion of the food, on normal motility, or secondarily on that which modifies this motility, intestinal catarrh, nervous

impulse or secretion of bile. Again, apart from the changes of nutrition, which may be infinitesimal, we are obliged to take into account the discomfort of the patient, which may merely consist in interruptions in his business pursuits or social functions, or even in nervous functional diarrheas. The movements may be preceded by colicky pains and loud gurgling sounds. From a large collection of reports of conjoined examinations of gastric contents after a test breakfast, and feces of individuals, largely on a Schmidt diet made for diagnostic purposes, I have selected the following cases to illustrate these conditions. We will first consider the achylias, or, rather, presumably achylias, because while the pepsin is present in some cases, the effect on account of the absence of hydrochloric acid is the same as though no pepsin were present. Of this variety of gastric disturbance there were six cases as follows:

Mrs. T. has diarrhea. Gastric contents: Amount, 15 ccm. No free HCl. Pepsin present. Total acidity, 29.

Stool: Unformed, large number of fatty acid and soap crystals as well as meat fibers. Mucus intimately mixed with the feces with well-stained nuclei free, epithelial cells attached. No connective tissue.

Mrs. D. Constipation. Gastric contents: Amount, 25 ccm. No free HCl. Total acidity, 30.

Stool: In the stool I found no meat fibers or connective tissue, but minute portions of mucus with colored epithelial cells attached, partly digested.

Mrs. K. Long-continued diarrhea. Gastric contents at forty-five minutes showed no free HCl. Stomach empty in an hour after test breakfast.

Stool: Semi-liquid, a large number of fat globules entirely undigested. No meat fibers nor elastic tissue. Numerous minute fragments of mucus intimately mixed with the feces. Many stained shrivelled epithelial cells, whose nuclei have largely disappeared.

Mr. C. Constipation. Gastric contents: Amount, 10 ccm. No free HCl. Total acidity, 14. Rennin present. pepsin not sought.

Stool: Large number of meat fibers and fatty acid needles. Large number of shrivelled stained epithelial cells with nuclei obliterated by digestion. No mucus.

Mr. E. Constipation. Gastric contents: Amount, 29 ccm. No free HCl. Rennin and pepsin present.

Stool: Dark, formed and covered with tenacious mucus not mixed with the feces. No food elements whatever. Few minute fragments of mucus which are stained, but no cells imbedded in same. No elastic tissue.

Mrs. G. E. K. Diarrhea, two to three movements daily. Gastric contents: Amount, 30 ccm. No free HCl. Total acidity, 5.

Stool: Liquid, of light yellow color. Large number of well-stained meat fibers. Very many fatty acid crystals. Elastic tissue, many fragments of stained mucus mixed with feces.

Of these six cases, it is seen, only three had diarrhea which is supposed to accompany achylias, and in but one instance is connective tissue a feature in the stool. Fatty acid crystals, however, are pretty constant and meat fibers form a large portion of the microscopic picture; these are undoubtedly dependent upon the increased motility of the small intestine, which is unquestionably associated with an increased gastric motility, as indicated by the invariably small amount of contents withdrawn and by the fact that in one case (Mrs. K.) it was necessary to withdraw the contents at forty-five minutes, since the stomach was empty in an hour. In three cases the mucus found was of such a nature as to indicate that it came from the small intestine (small stained fragments intimately mixed with the feces), while in one case the mucus undoubtedly came from the colon. This condition does not by any means necessarily indicate an inflammatory disturbance of the intestine, for, as in asthma, mucus can be secreted from nervous impulse alone and, when secreted by this influence in the bowel, by subsequent digestion affords exactly this appearance. The symptoms in all these cases would seem to confirm this suspicion of the neurasthenic character of this form of disorder. Patients complain of "bowels distended with gas," "throbbing in the legs," "legs numb above the knees on standing," "has a dazed feeling," expressions which are taken at random from the history of these patients. One thing is very noticeable — that we do not find elastic tissue which Schmidt describes as accompanying these achylias, and so common is this difference from that author's dictum that I no longer attempt to diagnose a diminution of hydrochloric acid from the discovery of elastic tissue in the stool. In other words, it is not found where hydrochloric acid is wanting and is found, sometimes, where hydrochloric acid is in excess. Another noticeable factor with reference to these patients is a small amount of gastric contents withdrawn. This only substantiates the observation often made that achylias are associated with increased motility, and in spite of the discovery of Pawlow that gastric juice may be secreted by the mere impression of taste and sight of food which arouse appetite, it is not improbable that in purely functional forms of disorder, were the food to remain longer in the stomach, active gastric juice would be secreted; nor is it probable that this increased motility is confined to the stomach alone, but is participated in by the small intestine, thereby producing in the feces the evidences of intestinal indigestion; this seems much more probable that that there is any failure or deficiency in the pancreatic juice, since of its three functions, digestion of fat, protein and starch, the two former are most commonly faulty.

We will now proceed to the other extreme, where we have five cases of hyperchlorhydria, which I prefer, for purposes of analysis, to differentiate from hypersecretion, though Bickel would have us understand that they are one and the same.

Mr. E. C. Bowels regular. Gastric contents: Amount, 75 ccm. Free HCl, 95. Total acidity, 115. Five subsequent examinations in which the free HCl varied from 55 to 90.

Stool: No abnormalities found.

M. M. Diarrhea, two to three loose stools daily. Gastric contents: Amount, 45 ccm. Free HCl, 50. Total acidity, 78.

Stool: Semi-solid, unformed, with no mucus adherent. Numerous well-stained meat fibers, moderate amount of neutral fat and some soap crystals. Very many stained and unstained epithelial cells, some with nuclei.

C. H. Constipation alternating with diarrhea. Gastric contents: Amount, 70 ccm. Free HCl, 75. Total acidity, 95. Two other examinations were made where the free acid was 80 and 56 (treatment by olive oil?).

Stool: Formed, hard, containing scybalæ. Numerous meat fibers, small amount of free fat and a few fatty acid needles. Some small fragments of mucus to which a few stained epithelial cells were attached.

W. T. Constipation. Gastric contents: Free HCl, 60. Total acidity, 70.

Stool: Black, hard and formed. A few well-colored meat fibers and fatty acid crystals; a very large number of small fragments of mucus with many colored epithelial cells imbedded therein. There was also some elastic tissue.

E. J. Bowels regular. Gastric contents: Amount, 120 ccm. Free HCl, 55. Total acidity, 65.

Stool: Semi-solid, normal color. Numerous fatty acid needles and well-stained meat fibers. Large fragments of mucus from the colon (colorless cells with nuclei) as well as minute fragments (microscopic) of mucus, highly colored and well mixed with the feces containing many nuclei-free epithelial cells; many so-called "sago" grains.

It will be readily seen that constipation is not a constant concomitant of hyperchlorhydria. In these five cases it occurs once alone and once alternating with diarrhea; in one other case diarrhea was constant, and twice the bowels were regular. Three of these cases showed mucus in the feces of the minute variety, which indicates its origin from the small intestine. This source is still further substantiated by the attached colored cells which were found. The question naturally arises, Is the mucus due to a true inflammatory disturbance or to a neurosis such as is found in asthma? Probably the latter, since in none of these cases is tenderness of the abdomen complained of, and the symptoms are referred almost wholly to the stomach. In every case, too, where only a functional disturbance of the intestine occurs, digestion of meat and absorption of fat are impaired; now, as meat fibers and fat are digested by the pancreatic juice, this disagreement in its function is hardly probable as a result of impairment and, as mentioned, the incongruity is dependent upon increased motility in the small intestine, which, with Bickel's view that hyperchlorhydria is dependent upon the increased motility of the stomach, makes a consistent whole of the hastened activity of the gastro-intestinal tract, or at least of that part of it involved in digestion and absorption. The presence of elastic tissue with a free hydrochloric acid of 60 requires some other explanation than that of ineffective gastric juice, if the old view that increased hydrochloric acid is associated with increased pepsin prevails. Schmidt states that, if this occurs (presence of elastic tissue) where the motility is impaired, it must be associated with diminished pepsin, which, he states, may occur with the increased normal acid of the stomach.

There are now two cases of hypersecretion that have been selected from the list which are introduced largely for comparison.

E. P. Constipation. Gastric contents: Amount, 270 ccm. Solid portion, ¼. Free HCl, 25. Total acidity, 41.

Second examination: Amount, 225 ccm. Free HCl, 35. Total acidity, 55.

Stool: Scanty, solid and of light brown color. Some neutral fat and abundant fatty acid crystals. An occasional well-stained meat fiber but no starch. Many small fragments of mucus, well studded with colored epithelial cells.

J. K. Constipated. Gastric contents: Amount, 120 ccm., one quarter solid. Free HCl, 55. Total acidity, 70. Twelve hours after eating a Riegel test meal, 20 ccm. of fluid expressed containing no food fragments but having a free HCl of 40.

Stool: Hard, formed, contains a few fat globules but no fatty acid and no mucus.

In the group of cases of which these two form an example there can be no possibility of an impaired motility, either exaggeration or delay, so that we have to deal with a pure secretory anomaly and find that in one case there is impairment of intestinal digestion and in the other not.

Now, we come to a group of cases where impaired motility is assured, for these are clearly not instances of obstruction at the pylorus; rigidity of the stomach did not occur in any case and the stomach was able to empty itself fully but after a prolonged period. The stomachs were all dilated, reaching to the navel, or below, on inflation.

T. P. Constipation. Gastric contents: Amount withdrawn, 240 ccm., two-thirds solid. Free HCl, 60. Total acidity, 75.

Stool: Mushy stool of brown color; a small amount of free fat and starch granules present. A few lightly stained meat fibers and a vast number of fatty acid and soap crystals. Numerous shreds of colored mucus with colored epithelial cells attached and a few connective tissue masses.

C. R. Constipated. Gastric contents: Amount, 240 ccm., one-half solid. Free HCl, 75. Total acidity, 100.

Stool: Brown and formed. No mucus attached. Microscopically a large number of free starch granules and a great many fatty acid crystals. Very many minute fragments of mucus both colored and uncolored with cells attached. No connective tissue.

M. Mc. Constipation. Lower border of stomach normal, but succussion two hours after eating. Gastric contents: Amount, 120 ccm., one-third solid. Free HCl, 45. Total acidity, 60.

Stool: A hard formed stool with some mucus attached. No fat, starch nor meat fibers. Upon examination the mucus was found to be colorless (colon) and free from attached cells.

S. P. Constipation. Gastric contents: Amount, 150 ccm., one-half solid. Free HCl, 50. Total acidity, 70. Nine and one-half hours after a meal of scraped meat, a slice of bread and 240 ccm. of milk, 60 ccm. of gastric contents was withdrawn from the stomach, of which two-thirds was solid, with a free HCl of 35 and a total acidity of 50.

Stool: Light colored and semi-solid. Many minute fragments of mucus without epithelial cells adherent and connective tissue. No meat nor starch, but many soap crystals.

In these cases it is interesting to note the presence of connective tissue as a constituent of the stool in two instances where the HCl is ample; in fact, in one case much increased (60); what, then, is the cause of their presence if elastic tissue is always digested in an active gastric juice? Here we do not have the excuse of a hastened motility, for plainly such does not exist in these patients. Schmidt offers the rather lame explanation that where the motility of the stomach is impaired, decomposition agencies (*Zersetzungprocesse*) play their part, but such processes are never prominent where free HCl is present in normal quantities, much less so when in increased amounts, as in most of the cases reported. My own explanation, though theoretical, is based upon sound physiological principles. Motility of the stomach is largely confined to the pars pylorica, and while thorough mixing of the food occurs there normally, it has been demonstrated by sections of a frozen digesting stomach that the food remains in the fundus of the stomach in consecutive layers in which only the outer portions come in contact with the stomach wall and hence with the active gastric juice. Therefore with impaired motility of the pyloric portion of the stomach it is conceivable that the connective tissue of the test diet may pass through the pylorus without coming in contact with the gastric juice. That deficient pepsin may occur with increased HCl has been proven, but it remains for some one to prove that this is the cause of the presence of connective tissue in the stools when hyperchlorhydria is present. In two instances we find in the stool minute fragments of stained mucus with epithelial cells attached, which are usually deprived of their nuclei by the action of the trypsin; we have agreed to call this condition functional enteric catarrh to distinguish it from the true enteritis which is usually associated with diarrhea; but as is well known, we may have a fairly marked enteritis with constipation, or constipation with alternating diarrhea, since, with lack of involvement of the colon, the liquid intestinal contents hurried through the small intestine have an opportunity to "dry out," so to speak, beyond the ileocecal valve by delayed passage and absorption of water so that the movements may occur but once in a day or even once in two days, be hard and formed and still contain mucus, which unquestionably comes from the small intestine. This condition is no more strange than that found in typhoid where with unquestioned inflammation of Peyer's patches the movements occur only by means of artificial aid. In three instances the presence of fatty acid and soap crystals shows the lack of absorption; in fact, absorption seems to suffer more than digestion in these functional disturbances of the small intestine, for their presence demonstrates the perfect digestion of fat provided no fat globules are present. True, we may have partial splitting of the fat by bacteria, even if pancreatic juice be wanting in the intestine, but in over two hundred examinations of stools, I have never failed to find some free fat in conjunction with the fatty acids where we had reason to suspect the elimination of the pancreatic juice from the intestinal canal. In two instances also, where resource was had to rectal feeding in which fat was employed, often after twelve hours' retention of a nutrient enema, though in the stools fatty acids were numerous, still some unsplit fat remained. In two cases of this series there was evidence of impaired intestinal digestion, in one case of both fat and starch and in the other of starch alone. We must attribute these anomalies, as before, to increased motility of the small intestine since we cannot conceive of an absence of the pancreatic juice without all its digestive functions suffering. Why this increased motility should affect the starch and protein digestion more severely than the fat is unexplainable, but such is usually the case. In laboratory experiments fat is not split any more rapidly than starch is converted to its digested products, but protein requires the greatest amount of time for its complete conversion. It is time we should all begin to recognize this fact to which Nothnagel pointed many years ago, that well-marked idiopathic intestinal catarrh confined to the small intestine may exist with daily formed stools and this condition can only be detected by careful microscopical examination. True, such individuals may have intercurrent diarrheas of short duration which, while the author mentioned ascribed them to errors in diet, I am inclined to attribute to mere mental strain or effort, as, for instance, an unusually trying day's work. Such cases differ very decidedly from the ordinary diarrhea due to mental influences without the antecedent chronic catarrh; the stools in the former instance are liquid, may contain the food elements and even bile and mucus, but they are not filled with desquamated epithelial cells, particularly those which show granular degeneration.

In conclusion, we may say from a study of these cases that diarrhea does not always accompany an achylia nor a hypochlorhydria, nor, from the presence of connective tissue in the stool, can we always deduce the state of the gastric juice. Furthermore, while hyperchlorhydria is usually accompanied by constipation, we may have diarrhea, or the bowels may be regular, while with gastric myasthenia constipation is the rule, as it is in hypersecretion. A functional chronic catarrh of the small intestine may exist associated with any of these gastric conditions, with excessive or no free HCl and with increased or impaired motility, so that we can only say that improperly prepared food is poured into the small intestine which either on account of this extra burden or on account of some antecedent inflammatory disturbance undergoes a functional impairment that usually manifests itself by the increased motility.

## ON THE POSSIBLE EFFECT UPON THE AUDITORY LABYRINTH OF THE EHRLICH-HATA REMEDY IN THE TREATMENT OF SYPHILIS.*

BY PROF. G. ALEXANDER, M.D., VIENNA, AUSTRIA.

TRANSLATED WITH THE AUTHOR'S PERMISSION BY GEORGE L. RICHARDS, M.D., FALL RIVER, MASS.

PROFESSOR FINGER recently reported three cases of syphilis in which there appeared peculiar and somewhat serious symptoms affecting the organs of hearing. It must, therefore, be our most diligent study to determine as early and as surely as possible, whether, in the presence of such symptoms, we have to do with the poisonous action of the arsenobensol upon the auditory nerve or not. I may be able to contribute some material which will aid in the clearing up of this question. For a period of six years I have constantly collected clinical and, as far as it was possible, anatomical material for the study of syphilitic diseases of the ear, and this material is for the most part already prepared for publication in the "Handbook of Genital Diseases."

Up to the year 1907 my material consisted of all those cases of syphilis which for purposes of diagnosis were sent from the two dermatological clinics of the Vienna General Hospital to the Ear Clinic. Through the kindness of my colleagues of the Policlinic, privatdocent Dr. Nobl and privatdocent Dr. Brandweiner, I have had the opportunity to observe all the cases of syphilis appearing there since 1907. During the years 1907–1908 I also had the opportunity of examining the material from the clinic of Professor Finger. This gave me the opportunity to observe and diagnose those forms of disease of the ear, and especially of the auditory nerve, which give so few symptoms, and these so rapidly disappearing, that the patient does not usually apply for treatment. For this reason such ear symptoms are easily overlooked. Finally, my material consists also of those cases in which the patient complained of trouble in the ear either at the time of or since the syphilitic infection that have applied for treatment at the ear department of the Policlinic since 1907.

A short time before the paper of Professor Finger was published he asked me the following important question, "Before we had the Ehrlich-Hata remedy '606' you had for a long time the opportunity to observe, and to methodically examine, my clinical material. Have you seen during this time any cases similar to those which I observed after the use of the injection?" This question I now answer. My observed material of syphilis of the ear, excluding those cases of diseases of the ear metaluetic in character (i. e., of tabes and paralysis), consists of sixty-eight cases. These have all been thoroughly examined and observed for quite a long time so that I am able to draw conclusions of both diagnostic and prognostic significance. In the course of the last six years I have seen twelve cases of ear disease appearing in the early stages of syphilis. Three of these cases showed disease of the external and middle ear, but in comparison with the cases reported by Professor Finger and Professor Urbantschitsch they show less severe affections of the auditory nerve and are, therefore, to be excluded. Comparing, now, my remaining nine cases with the three of Professor Finger, I obtain the following results. My nine cases represent a period of observation of six *years;* the three cases of Professor Finger of six *months*. In one of Professor Finger's cases the syphilis was of six weeks' duration; in the other two it was of three months' duration. Among my nine cases I can only find one in which the ear disturbance developed after thirteen weeks. In all the other cases in which the disturbance of hearing came during the early stage of the syphilis, it did not appear earlier than the fourth, fifth or sixth month.

We will now compare them as regards severity. Four of the cases showed a very slight degree of disturbance of the auditory nerve, slight dizziness or a slight degree of deafness, with subjective noises and a rapid favorable result. Serious or severe ear disease, as in Professor Finger's cases, I have observed in only five of my cases. One of them was treated with atoxyl; in the other four the symptoms appeared after the ordinary forms of mercurial treatment by inunction or injection. From this it follows that acute syphilitic neuritis of the auditory nerve, whether localized in the cochlear or vestibular portion of the nerve, is, in the early stages of syphilis, very rare. During a period of six years, and with a much larger material, I have seen only *one case more* (5) with vestibular symptoms than has Professor Finger with his arsenobensol-treated material during six months. In the literature up to the present time, cases of labyrinth syphilis, i. e., syphilitic inflammation of the auditory nerve in the early stages of syphilis, have been almost unknown. In his book on Ménière's symptom-complex, Von Frankl-Hochwart surveys forty cases of syphilis. The symptom-complex of Ménière is nothing else than a disease of the labyrinth or the vestibular nerve, and the entire forty cases of Von Frankl-Hochwart are those of chronic or latent syphilis. Professor v. Frankl-Hochwart has told me that he has never observed the Ménière symptom-complex in an early stage of syphilis. Politzer has reported the appearances of labyrinth syphilis in one case of syphilis of seven days' duration. This observation was made in 1878 and is, up to the present time, unique.

From the foregoing it is certain that the cases reported by Professor Finger, in so far as they are cases of disease of the auditory nerve in an early stage of syphilis, must be considered to have an etiological relation to the arsenobensol. It is not yet possible to assume with absolute certainty if during antisyphilitic treatment severe labyrinthine symptoms appear, that such symptoms are of necessity due to the treatment. Should one, however, defend this assumption, he must admit that it is possible to have, as

*A paper presented before the Gesellschaft für Aerzte, Vienna, Dec. 6, 1910.

Professor Riehl has rightly pointed out, severe cases of Ménière's symptoms, the severe acute forms of auditory nerve disturbance, even absolute deafness after or during the usual mercurial treatment. Among my material I recall two such cases, in both of which severe Ménière's symptom-complex appeared during the usual mercurial treatment. Both were, however, as are the other cases in the literature, cases of long-standing syphilis.

I now come to the consideration of my own observations on patients treated with arsenobenzol. These observations are based on the cases of syphilis treated by privatdocent Dr. Nobl, with arsenobenzol, seventy-two in number. Regarding the other peculiarities of his observations he has already spoken. Of the seventy-two cases, there was only one in which, after the injection, symptoms of disease appeared in the organ of hearing.

The patient was a seamstress thirty years of age who acquired syphilis in the spring of 1910 and had injections of mercury. At the end of July disturbances of hearing appeared in the right ear. She complained of deafness and disagreeable tinnitus, increased by movements of the head. Dizziness was also produced by movement of the head and she had the feeling as though something was turning inside the head; she staggered toward the right side but did not observe any turning of herself or apparent rotation of the surroundings. She had neither nausea nor vomiting. There was at this time some disturbance of vision in the right eye. The patient came to my clinic early in August. Examination showed disease of the right auditory nerve in the cochlear as well as the vestibular portion. At this time the left ear was absolutily normal. Under treatment by Dr. Von Zumbusch in the Rudolphspital the right-sided ear affection completely healed. She heard perfectly well in each ear and remained free of all symptoms until Oct. 2. On Oct. 16 she came to the clinic with the history that the right ear had remained completely healed but that on the afternoon of the 2d of October she suddenly noticed that she heard badly in the left ear and at the same time severe noises appeared. Examination at this time showed the right ear to be normal in every way while the hearing power of the left ear was greatly diminished (cochlear affection), but there were no vestibular symptoms to be attributed to the left side. The same day, Oct. 16, she received from Dr. Nobl an injection of the Ehrlich-Hata "606." After the injection the noises in the left ear stopped; she thought also that she heard better in the left side. Several days later sharp pains in the left ear came on, these extended down the neck and on to the back of the head and have continued up to the present time (Dec. 6) almost unchanged. On rising on Nov. 10 she noticed that she heard very badly in the left ear, and the noises were as bad as in the beginning. On her way to the Polyclinic she had a severe attack of dizziness so that she very nearly fell to the ground; articles about her seemed to turn to the right and she has had more or less dizziness since. On this date there was also some fever. Since Nov. 11 she has vomited two or three times daily. The dizziness is increased by changes of position, the attacks becoming paroxysmal on standing up or lying down, while during complete rest there is occasional freedom from the dizziness. Examination of the ear on Nov. 11 showed that the originally diseased right ear remained absolutely normal; on the other hand, the left ear had completely lost its function and the vestibular apparatus and the vestibular nerve did not react. This condition remains now, Dec. 6, unchanged. Since the middle of November there is also present a paralysis of the left facial nerve in all three branches. The paralysis is not complete, and the reaction to the faradic current still remains.

We have here a clinical picture under observation from the very beginning, as the patient before the Ehrlich-Hata injection had already, in the early stage of the syphilis, symptoms of disease in the inner ear of the right side. These symptoms affected the right ear only, and after treatment by mercury they entirely disappeared and complete healing took place.

Later, however, although still in the early stage of the syphilis, similar symptoms appeared in the left ear and became very much worse after the Ehrlich-Hata injection. Following this injection the disease extended itself over the entire area of the left auditory nerve and finally resulted in deafness and complete loss of function in the labyrinth of that side.

I think this case is suitable for bringing to our understanding the part which the arsenobenzol played as the etiological factor in the production of the ear disease. It is important to notice that the arsenobenzol was given at the time when the left auditory nerve was acutely diseased. In my opinion the previously existing disease of the vestibular nerve presented *a point of weakened resistance to the action of the arsenobenzol.* The right auditory nerve, which was healed at the time, was not affected, but the left, already diseased ear was made much worse after the injection; hence we come to the conclusion that in cases of recent syphilis where there is already disease of the auditory nerve there is danger that the disease of the nerve will be made much worse by the use of the arsenobenzol.

Further observations will be necessary to determine whether this danger exists only in the presence of already existing syphilitic disease of the auditory nerve, as in my case, or whether an already existing non-syphilitic disease of the auditory nerve affords a predisposition or probability that the disease of the nerve will be made worse by the use of the arsenobenzol.

When one considers the experiments made with arsazetin, it seems probable that there is some danger of making the condition worse in every case in which at the time of the arsenobenzol injection there is already present disease of the auditory nerve, whether syphilitic or otherwise.

Ehrlich produced, by injecting white mice with arsazetin, phenomena similar to those of the true Japanese dancing mouse, Röthig has examined the central nervous system of the arsazetin-injected mouse after the plan of the work of Kreidel and myself on the ear of the Japanese dancing mouse. As an anatomical basis for the dancing movements of the arsazetin-injected mouse he found degeneration of the central fibers of the vestibular nerve. In order to answer the question why, apart from the optic nerve, the arsazetin finds its point of attack in the vestibular nerve in the white mouse, he examined the vestibule nerve in a larger number of normal white

mice. He found that in the white mouse there was already beginning a certain amount of vestibular degeneration. The arsazetin finds, therefore, in the vestibular nerve of the ordinary white mouse, a point of lessened resistance. This explains, according to Röthig, why, after the arsazetin injection, there appears at once in the white mouse a severe degeneration in the vestibular nerve and at the same time a disturbance in the turning movements. From these conclusions we come to the following theory. It is not to be expected that a previously sound auditory nerve will be destroyed by the arsenobenzol injection. On the other hand, an unfavorable action from the arsenobenzol is to be feared whenever the auditory nerve is diseased previous to the use of the arsenobenzol.

Finally, I wish to state my own standpoint as an otologist with reference to the manner of the action of arsenobenzol upon syphilitic ear patients. More and more often is the question asked whether, in a case of syphilitic ear disease, the Ehrlich-Hata injection is indicated or not. After the preceding observations, which naturally do not give an absolute finding, it is to be recommended to use caution in cases of acute syphilitic disease of the auditory nerve. Especially is caution in the use of the remedy to be recommended in the presence of acute or chronic disease of the auditory nerve in cases of recent syphilis, as here it is to be feared that the ear symptoms will be made worse. It appears to make no difference whether the disease of the auditory nerve is of itself of syphilitic origin or not.

An unfavorable influence is also to be feared in cases of acute syphilitic affection of the auditory nerve in old cases of syphilis or latent chronic syphilis. In cases of hereditary syphilis it is also to be recommended in the presence of acute manifestations of trouble with the auditory nerve to wait before giving the Ehrlich-Hata injection.

On the other hand, there are a large number of cases of ear disease in which the previously described dangers from the arsenobenzol injection cannot be considered as dependent upon it. Here belong the cases of chronic syphilitic affection of the auditory nerve with slight diminution of hearing power and considerable tinnitus, as well as the cases of chronic labyrinth dizziness. I would only mention that in these cases we had good results from treatment before the time when "606" achieved good results.

Finally, the Ehrlich-Hata has a good effect in cases of chronic labyrinth disease in chronic syphilis. The good results reported by Professor Urbantschitsch in one case of hereditary syphilis and in two cases of cochlear disease and chronic syphilis encourage us to proceed farther along the path already laid out.

NOTES BY THE TRANSLATOR.

The three cases of Professor Finger to which reference is made were those cases out of 170 treated with "606" which showed ear symptoms after the injection.

Case I, male, twenty-two years, came to *klinik*, Aug. 20, 1910, with cutaneous syphilis and osteoperiostitis of the tibia. Aug. 24, 0.5 neutral Ehrlich-Hata injected. Aug. 25, nystagmus, dizziness, typical falling symptoms, but with intact hearing. Diagnosis by the Ear Clinic: Isolated disturbance in function of the vestibular nerve. Complete recovery in a few days.

Case II, male, twenty-five years of age, syphilis six weeks. Aug. 27, 1910, 0.45 Ehrlich-Hata, method of Wechselmann, injected. Sept. 8, initial lesion healed, patient discharged. No sign of secondary syphilis up to Nov. 2, and Wassermann negative. On this date, nine weeks after the injection, and three months after the infection, dizziness and deafness appeared. At the Ear Clinic the diagnosis of bilateral labyrinthine deafness was made. The condition remains unchanged.

Case III, female, eighteen years, came Aug. 1 for macular type of syphilis of three months' duration. Aug. 5, 0.45 neutral Ehrlich-Hata, method of Wechselmann, injected. Aug. 17, all signs of syphilis had disappeared and she was discharged cured. On Nov. 3 she was free from syphilis. Wassermann reaction negative. Nov. 3, complained of dizziness, headache, and the Ear Clinic made a diagnosis of labyrinthine deafness, dizziness and spontaneous nystagmus. There is no improvement at time of reporting, Nov. 27, 1910. (Wien. klin. Wochenschr., No. 47 and No. 51, 1910.)

At a subsequent meeting of the Gesellschaft für Aerzte in Vienna, before which Professor Finger's paper was read, some other cases in addition to those of Professor Alexander were reported where ear disease had appeared as late manifestations after the use of the Ehrlich-Hata.

v. Zumbusch had found in the literature, among 7,000 cases from twenty-five *klinikz*, 9 cases of auditory nerve disturbance, all being cases with secondary manifestations from second to seventh month, and in most cases the Wassermann was negative.

Dr. H. Frey reported a patient injected on Aug. 9 with 0.5 arsenobenzol who returned late in October with deafness and some vestibular nystagmus. This case later showed the exanthemata of syphilis so that Dr. Frey was not certain that these manifestations could be laid to the arsenobenzol. (Wien. Klin. Wochenschr., No. 50, 1910.)

Through the kindness of Dr. Daniel Kaufmann, I was given the opportunity of seeing two cases, each of whom had deafness and labyrinthine symptoms some time after the Ehrlich-Hata injection. At the time of the appearance of these symptoms the Wassermann reaction was positive. Both patients were given mercury by injection, and when I saw them all symptoms were improving. Here it might be difficult to say whether the ear symptoms were due to the arsenobenzol or to the uncured syphilis. In Dr. Kaufmann's opinion they were due to the arsenobenzol.

Professor Rille, of Leipzig, has recently reported (Berl. klin. Wochenschr., Dec. 12, 1910) three cases of ear involvement which may be briefly referred to:

Case I, female, twenty-one years old, with no previous ear symptoms, maculo-papular syphilide with involvement of the tonsil, was given an injection of Ehrlich-Hata, July 7, 1910. Four weeks after the injection, 0.45 gr., there appeared, dizziness, noises in ear and deafness located largely in the right ear, where both air and bone conduction were lost. Later there appeared a partial facial paralysis and symptoms of choked disk in the right eye. Up to Nov. 15 there had been some improvement, there is some bone conduction, but conversation speech is not heard. The left ear is normal.

Case II, female, eighteen years old. Ehrlich-Hata injection, 0.45, on July 10. On Oct. 10 pain in head

and dizziness appeared and on the following day right-sided facial paralysis, followed in three days by optic neuritis. Under treatment with mercurial ointment the facial paralysis and other symptoms disappeared. Nov. 17, discharged cured.

CASE III, male, thirty-three years old. Injection of 0.7 Ehrlich-Hata, July 7. In middle of October there suddenly appeared a high degree of double-sided labyrinthine deafness at which his previous occupation, that of blacksmith, may have predisposed.

## THE TREATMENT OF FISTULA IN ANO.*

BY T. CHITTENDEN HILL, M.D.,
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MY reason for bringing to your consideration such an old subject is that the operative treatment of ano-rectal fistulæ involves several interesting anatomic questions.

Besides, it is the most common of rectal troubles, constituting nearly 50% of rectal affections, and the results of improper treatment are so direful and manifest that it may prove profitable to review briefly the best methods of procedure in the more common varieties of fistulæ.

There are two methods more or less in vogue at the present time that are so enthusiastically recommended by their advocates that I would like to refer to them briefly, even though they do not seem to me to possess much merit.

They are, excision with immediate suture, and the treatment by the injection of bismuth paste.

### (1) EXCISION WITH IMMEDIATE SUTURE.

This method, as a refinement of surgery, has been recommended as the ideal operation, and it would seem that we must instantly and unhesitatingly decide in favor of it.

All are agreed that the method is ideal, but practically it is almost impossible to so sterilize a fistulous tract as to get primary union, and I have yet to know of any surgeon who has practiced this method for any length of time not to come to the same conclusion.

It is one of the first principles of surgery to drain an abscess, and a fistulous tract is nothing more or less than an old contracted abscess cavity.

Of course, in a simple direct fistula without lateral burrowing, the whole tract may be dissected out and sutured with some prospect of a perfect union, but these fistulæ are so simple and small that it is hardly justifiable to confine the bowels and the patient as well for five or six days, when they can be just as quickly and with less inconvenience cured by a simple incision.

### (2) INJECTIONS OF BISMUTH PASTE.

The injection of a bismuth vaseline paste stiffened somewhat with paraffine was first advocated by Dr. Emil G. Beck, of Chicago, for the treatment of chronic sinuses and fistulæ. It was thought that the curative agent lay in the nitric acid which was given off by the hydrolizing action of the heat of the body on the subnitrate.

* Read before the Norfolk District Medical Society, Dec. 27, 1910.

Although Beck had used it more especially in other parts of the body, a prominent surgeon soon reported seventeen cases of rectal fistulæ, 75% of whom were apparently cured.

The phrase "apparently cured" is rather ambiguous, as a rectal fistula is either cured or not cured, as any one can demonstrate for himself.

In a recent paper, however, this same authority states that later results were not so favorable, and continues as follows: "Formerly I treated all my fistula cases with the paste; now I select them and am having better results."

The technic, which is quite simple, is to first liquefy the paste by heating in a water bath and then with a suitable syringe inject with sufficient force to fill all the tracts and diverticuli of the fistula.

The internal opening, if one exists, is plugged with the finger in the rectum, and other external openings are kept closed by an assistant.

These treatments are to be continued at intervals of three or four days. The paste is supposed to come out spontaneously in from twenty-four to forty-eight hours, but in one of my cases — a blind external fistula — such was not the case. As the patient complained of considerable pain after two weeks' treatment, a digital examination was made and a retrorectal abscess could be felt three inches above the anus.

An operation was at once performed under general anesthesia, and upon laying open the original sinus, a hard mass of the paste, the size and shape of a small English walnut, was found, which without any doubt, by blocking up the discharge, had been the cause of the abscess higher up.

By making a free T-incision the abscess and fistula as well were cured without further complications.

My experience with the paste has been limited to twelve dispensary patients, upon whom I employed this method, giving much attention to the details of administering it, but I am unable to report a single cure.

Numerous other proctologists who have used the bismuth paste report similar results, or at the most claim only to have met with partial success.

For this reason I believe this method will ultimately go the way of the elastic ligature, the injections of caustics and others; that the incision operation is to-day, has been in the past and will in all probability for some time to come, remain the procedure most suitable for the majority of fistulæ.

### (3) INCISION.

I wish simply to emphasize certain well-recognized principles of this operation, the neglect of which by the surgeon has often led to failure and laid the operation open to criticism.

Tuttle's statistics of 2,196, collected from the records of general hospitals, reveal the disquieting fact that only 45% of the cases treated are claimed to have been cured, and it must be remembered that these are the statistics of the experienced

surgeon operating under favorable environment rather than the occasional operator, who is frequently obliged to do his work under less favorable surroundings.

The general rules applicable when operating upon any form of fistula are well known to most of you and need only be mentioned in this brief paper. It should never be forgotten that all manipulation with probes should be carried out with gentleness so as not to make a false passage. Especially is this true when operating within the rectum, as a steel director roughly used will easily pass through the submucous tissue, leading one to divide sinuses which are only the result of the surgeon's bungling. All subcutaneous burrowing should be laid open for a half inch beyond its extreme limit.

When there is difficulty in finding the internal opening, all the external lateral burrowing should first be dealt with, after which the main tract will be apparent and the internal opening easily found.

Overhanging edges of skin, especially if discolored or undermined, should be trimmed away.

Redundant mucous membrane abutting on the line of incision should be excised, or, if very vascular, ligated in the same manner as internal hemorrhoids.

These are general rules recognised by all surgeons and more or less regularly adhered to.

Aside from them, there are certain other interesting points upon which the success or failure of an operation depend.

In discussing these questions I ask your indulgence if many statements seem dogmatic, as it is believed they present the concensus of opinion of those surgeons who have had the most experience in treating this disease.

*First:* What are the dangers of incontinence? There is no disputing the fact that this condition does occur following fistula operations, but not with anything like the frequency that is generally attributed to it by the laity or the profession.

It is in nearly every instance preventable if proper regard for the sphincter be had during the operation and if, during the after-treatment, the wound be loosely packed and the skin and mucous membrane prevented from growing down into the incision. A fistular wound should never be packed, and if the words "packing" and "plugging" in this connection were eliminated from the works on general surgery, there would be less incontinence.

Now about injury to the sphincters. These muscles have been said to be the most important of the whole body, for if their office is destroyed by trauma or disease, the person is rendered miserable for life. Guarding the anal orifice is the external sphincter, a flat plane of muscular fibers elliptical in shape, intimately adherent to the skin which surrounds the anus, attached posteriorly to the coccyx by the ano-coccyxigeal ligament and terminating anteriorly in the central point of the perineum.

It is a voluntary muscle supplied by a branch of the fourth sacral nerve.

The internal sphincter is a thin muscular band half an inch in breadth, and but an aggregation of the terminal circular fibers of the intestine, and is not subject to volition as is the external. It is overlapped by the external sphincter.

Although authorities are not absolutely unanimous on this point, it is very generally conceded that a single division at right angles to its fibers, of the external sphincter muscle, will never be attended by incontinence.

An oblique division, however, may allow the ends to widely separate, and should a vicious union take place, the muscle is lengthened, and in this way more or less incontinence follows. So the rule to cut squarely across the muscle should never be forgotten.

When the director, in passing from the external opening of a fistula to the internal, lies obliquely to the muscle, an incision should be made at the external opening so that the director can be adjusted at right angles before division.

Another interesting condition which we have to deal with occasionally is as follows: Two absolutely distinct complete fistulas on opposite sides of the anus. In such a case, would you divide the sphincter in two places? There is considerable risk in a double division. The best procedure is to operate on the larger and deeper fistula first, laying it open in the usual way. The other fistula should be incised and thoroughly laid open, but the sphincter allowed to remain intact. Afterwards, if treated with stimulating solutions of silver, it may heal. If it does not, only a straight simple fistula remains which can be easily incised under infiltration anesthesia after the worst fistula has healed.

Also, when dealing with a large posterior horseshoe fistula when the internal opening is small, it is generally advisable not to lay open the sinus connecting the main tract with the bowel, as it is seldom required to cure the fistula. Of course, all external burrowing should be dealt with in the usual way, but the advantage of not dividing the sphincter is, first, that it may never be necessary, and, secondly, the rest of the wound is not soiled with flatus or feces during the healing process.

When, however, the internal opening is large, there is not much to be gained by leaving this part of the fistula, and as it will eventually have to be laid open, it is best to do it at once.

These remarks, thus far, have presupposed the internal opening of the fistula to be below the level of the internal sphincter muscle.

Fortunately, in the great majority of fistulæ, such is the case. Still, frequently, and often in the cases we least expect it, a high-lying sinus will be discovered at operation. These deeper burrowings almost invariably lie posteriorly to an imaginary line drawn from right to left dividing the anal region into an anterior and posterior half. Judging from a number of cases who had undergone one, two or even three unsuccessful operations at the hands of surgeons of unques-

tioned skill, I am inclined to believe that the proper method of dealing with this sinus is imperfectly understood. In these cases the sinus extends upward outside the muscular walls of the bowel and generally has its termination in the pelvi-rectal space above the levator ani muscle. Now, in order to perfectly drain the pelvi-rectal space, it is not alone necessary to dilate and curette this sinus.

A procedure which I called attention to four years ago in a paper on the treatment of superior pelvi-rectal abscesses, that seems to me of great importance is to incise the fibers of the levator ani a half inch transversely on either side of the sinus. This will maintain better drainage than simply dilating the opening in the so-called pelvic diaphragm. Two small rubber drainage tubes can be inserted and gradually withdrawn as the sinus closes.

The following case is an example of a posterior pelvi-rectal horseshoe fistula dealt with as above described.

A gentleman aged sixty-one was referred to me with what appeared to be an extensive horseshoe fistula of eighteen years' duration.

He had been operated upon eighteen years ago, eleven years ago, seven years ago, respectively, but had never been free from a discharge.

During the past four years several abscesses had been opened, and, taken altogether, he was in a miserable condition and had practically retired from active business.

Examination revealed but one external opening on the right side three inches from the anal orifice over the right tuberosity of the ischium. The internal opening was large and in the usual site, viz., in the middle line dorsally, and between the two sphincters.

The main track could be recognized as extending to the left ischio-rectal fossæ by the cord-like thickening so characteristic of a fistula. At operation, after laying open a typical horseshoe fistula, a sinus was found on the left side which extended upwards for three inches, terminating in a pocket in the superior pelvi-rectal space very close to the rectal wall. In dealing with this high-lying sinus, I did not feel that simply dilating the cavity would maintain free drainage for any considerable time. Dilating a cavity located above the plane of the levator ani in my hands has never proved satisfactory. This procedure simply separates the fibers of this muscle longitudinally, and in a very short time they are so closely coapted that while there may be some drainage, it is altogether inadequate for rapid healing. Therefore, I incised the levator on either side in the manner previously described. Although this was a most extensive fistula, and I had expressed the opinion that three months at least would be necessary for him to get well, the fistula was soundly healed in two months.

In closing, I would like to report a case of fistula in the posterior anal commissure, as it illustrates a class of fistulæ which seemingly present no difficulties, but almost invariably fail to heal satisfactorily, under the usual methods of procedure, as has been pointed out by Brick, of Philadelphia.

Now, the usual incision for such a fistula would be an anteroposterior cut. It will be recalled that posteriorly the external sphincter is attached principally to the coccyx, and as it passes about the anal orifice it forms a Y-shaped arrangement of its fibers. The difficulties often experienced in this class of fistula are that the sinus apparently seems to be doing well at first, but the discharge does not altogether cease and it will be found that a small pocket, more like an ulcer, persists at the ano-rectal line; repeated curettings and applications seem to have little effect upon it. Even the same operation repeated will prove of no avail.

The following case illustrates Brick's method of curing this form of fistula. A man, fifty-eight years of age, had had three unsuccessful operations during a period of eleven years. At operation a blind internal fistula that had its opening posteriorly between the sphincters extended rather deeply, but not above the levator ani, backward for two inches. There was a branching sinus one inch deep just back of the internal sphincter. This fistula was freely incised in the usual way and in addition thereto the muscular fibers of the external sphincter, on either side, were divided for about half an inch near the anal orifice. This procedure put the muscle at rest, and in this way provided for free drainage, and healing was not interfered with by the act of defecation. The wound healed soundly in a very short time, but I feel confident that without the lateral incisions of the sphincter muscle the sinus would have persisted. In fact, a surgeon who was present at the operation stated that he had freely incised the fistula on a previous occasion, and although he had given much attention to the details of the after-treatment, his efforts had proved unsuccessful.

## Clinical Department.

### SALVARSAN ("606") IN THE TREATMENT OF CHRONIC PEMPHIGUS.*

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BECAUSE of the great value of salvarsan as a therapeutic agent in syphilis, the probable benefit to be derived from its use in various other chronic disorders, and particularly in skin diseases of doubtful or unknown etiology, has been largely overlooked. Loeb[1] has employed the new remedy successfully in verrucæ vulgares and in lichen planus. Gioseffi[2] has given it a trial in leprosy, but with indifferent results.

In psoriasis and in pemphigus its action, as might be expected from so energetic and power-

* This paper was read, and the patient shown, at a meeting of the Jackson County Medical Society, Jan. 10, 1911.

[1] München. med. Wochenschr., 1910, no. 30, p. 1580.

[2] *Ibid*, no. 49, p. 2526.

ful an arsenical preparation, has been quite encouraging.

Recently I have employed the drug in a case of pemphigus chronicus, and the ensuing benefit was apparently so great, and the improvement in the condition of the patient so startlingly rapid, that the history is worthy of record.

Patient, A. D., farmer, male, single, aged forty-five, referred to me by Dr. W. H. Rees, of Pleasanton, Kan.

*Family history.* — The cutaneous history of the family is negative.



Fig. 1. Showing condition before treatment.

*Personal history.* — The patient is a native of Illinois, and a resident of Linn County, Kansas. He has never had a venereal disease. His general health has always been good.

*Present illness.* — Eighteen months prior to the time of consulting me, an itchy, macular eruption appeared on the chest and upper arms.

In the course of a week, the abdomen and the lower limbs also were involved, and, within a fortnight, large blisters began to appear on the chest and arms. These lesions varied in size from a split pea to the half of a large hickory nut, and developed as bullæ. If the membrane was not ruptured, the enclosed fluid was gradually absorbed, and only a dry crust remained. More often, however, the blisters were torn by accident, in the patient's vain attempts to secure relief from the burning pain by scratching, and, after oozing serum for a few days, the affected areas became crusted over and ultimately healed.

During the year and a half that had elapsed since the onset of the disease, the skin had never been entirely free from bullæ, the number present varying from twenty or more to several hundred.

The lesions had never appeared in definite groups and had not developed in crops, although they were much more plentiful at some times than at others. The mucous membrane of the mouth had never been attacked, and the ocular conjunctiva also had escaped involvement.

Arsenic, in very large doses (forty minims of the liquor potassii arsenitis, three times per day), had proved to be of some benefit, but nothing had ever prevented the development of bullæ, nor given more than temporary relief from the pain.

*Examination.* — The accompanying photograph (Fig. 1) represents the patient's condition fairly well at the time of consultation. Over three hundred vesicles and bullæ were present on the body and limbs. The intervening areas were almost covered with scabs, crusts and the oozing bases of recently ruptured blisters of various sizes.

A lotion containing carbolic acid, zinc oxide, starch, glycerine and lime water was prescribed, and the patient sent to the University Hospital, in this city. A few hours later, 0.6 gm. of salvarsan was injected, subcutaneously, in the interscapular region. No new bullous lesions developed after the first twelve hours, and all subjective symptoms had practically disappeared at the end of two days. The condition of the patient's skin six days after the drug was administered is shown in Fig. 2.

Whether or not the result will be permanent remains to be seen. It may be found advisable to repeat the injection in a short time. At any rate, we have apparently obtained more benefit from the one dose of salvarsan in six days than could be secured by the careful, conscientious employment of the older remedies over a period of many months.



Fig. 2. Showing condition six days after injection of salvarsan.

In my opinion, the result points more clearly to a parasitic factor in the etiology of chronic pemphigus than any other evidence that we now possess.

## Medical Progress.

### REPORT ON GYNECOLOGY.

BY WALTER L. BURRAGE, M.D.

#### ATMOCAUSIS OR STEAMING THE UTERUS.

S. FLATAU, of Nürnberg,[1] sums up the arguments for and against treating the interior of the uterus with live steam, — a method of treatment that has been much used since it was first popularized in Germany ten years ago by L. Pinkus. The author first stated his views at length in Volume 10 of the *Sänger-Martin Monatsschrift*, and now sees little reason for altering the opinions there expressed after a considerable personal experience.

The disinfecting power of steam seems to depend on factors that are difficult to estimate, the temperature, the pressure and the time of application not being the chief features apparently. Vaporization has less effect in a uterus with succulent, hyperemic tissues and a much more destructive action on a uterus the tissues of which are less abundantly supplied with blood and the seat of "fibrosis uteri." Dosage, therefore, is difficult and the danger is encountered of burning the mucosa too deep, whence it has happened that the literature contains a long list of young women suffering with menorrhagia who have been treated with vaporization, with the result that a permanent menopause, with all its attendant discomforts, has been established. Because of this danger the use of vaporization for disinfection and for hemostasis has fallen into disuse except in the treatment of bleeding fibroids, and Flatau uses it only in such cases.

*Vaporization in bleeding fibroids.* — Flatau uses vaporization in those cases of fibroids in which the muscular wall is studded with small tumors either interstitial or subserous, the uterine cavity though enlarged preserving nearly normal proportions. Under no circumstances must vaporization be used if the tumor projects into the uterine cavity and the mucosa has become thinned except when operation is refused or as a palliative measure to combat severe anemia in cases where the improverished blood state contra-indicated operation. In six cases of the last sort that Flatau had treated in the past ten years by vaporization, five were relieved of their flowing and the consequent anemia and they had no other symptoms except amenorrhea. The tumor did not decrease in size in any of these cases. In the sixth case, a woman with a pulse of 120–130 and hemoglobin of 30%, the menses ceased after vaporization, but the tumor increased to twice its former size in the course of five years.

*Sterilization.* — Sterilization by the destruction of the uterine cavity, a method of treatment advocated by Pinkus, the author does not favor, because it induces the premature menopause with its psychic and constitutional disturbances, and the same end is obtained by an operation which is comparatively safe, — resection of the Fallopian tubes.

*Hemorrhages of the menopause.* — In combatting flowing in women who are near the menopause, an exact histological diagnosis must be made from scrapings removed before the vaporization in order not to overlook cancer. The rule is laid down that atmocausis never takes the place of curetting, but supplements it.

Vaporization may cause a sudden elevation of the temperature on the second or third day, but this is generally a lighting up of old inflammatory troubles; therefore, Flatau thinks that atmocausis should not be employed in the presence of diseased tubes and ovaries and old pelvic inflammation. Free drainage of the vaporized uterus should be employed in all cases, and for this purpose a fenestrated glass tube is placed in the uterine cavity at the close of the treatment and left in place for about six days.

*Technic.* — The simplest technic is the best. He uses the boiler described by Pinkus and a cauterizing tube of celluloid on Dührssen's model, providing for a free return of the steam. The depth of the uterus must be taken with the sound before the treatment, and a collar adjusted to the cautery tube so that its inner end may not reach the fundus uteri by 3 cm. because of the danger of perforation of the uterus, an accident which occurred once in the author's experience. The uterine cavity should be dried with gauze strips before the vaporization, which should not last more than twenty to thirty seconds, beginning above and proceeding downwards. Should there be much bleeding from the preliminary curetting, it may be necessary to pack the uterine cavity with gauze to insure its being dry before the vaporization is begun.

Flatau concludes that atmocausis is applicable to only a limited number of cases of uterine hemorrhage.

#### RUT, OVULATION AND MENSTRUATION.

M. Pottet[2] summarizes the thirteen communications of Regaud and Dubreuil to the Société de Biologie during the years 1907–1909 on the subject of rut, ovulation and menstruation.

*Rut.* — It has been generally believed that rut, the periodical sexual heat of animals, and menstruation, its representative in women, are dependent on the internal secretion of the corpus luteum of the ovary (Fraenkel-Villeminn), but Regaud and Dubreuil point out that this theory does not apply to the rabbit. Their observations show that a female rabbit only accepts the male during the rutting period, and this is the only sure sign that rut is present. Under these conditions the rabbit becomes pregnant nine times out of ten, the rupture of the follicles taking place from seven to ten hours after coitus, and a corpus luteum being formed in the empty follicle whether the ovule has been fecundated or not. The rut seems to be determined by the existence of follicles almost ready to burst, the coitus actually causing their rupture.

If the theory of Fraenkel-Villeminn were true for the rabbit, there should be found in the ovaries soon after coitus, rut being present, well-formed

corpora lutea formed in follicles which had ruptured before coitus, but when the ovaries are examined previous to seven hours after coitus, the follicles are found to be intact. Therefore, the presence of the corpus luteum does not coincide with rut, and the sexual desire can have nothing to do with a secretion from the corpus luteum.

The authors investigated the influence of the interstitial gland of the ovary in rabbits in producing rut and came to the conclusion that the appearances of the gland vary so much in different rabbits and in rabbits of varying ages that definite statements are difficult to make. In 16 rabbits examined just after the period of rut, the interstitial gland was well developed in 5 cases and poorly developed in 11 cases; therefore, they conclude that the interstitial gland of the ovary has no direct influence on rut.

Lataste showed by his researches that sexual phenomena were rhythmic in the females of several species of rodents, the rhythm being thirty days.

Regaud and Dubreuil adopt this view and show further a new point, namely, that the rut is influenced by the presence of the male, first, because female rabbits living entirely separated from the male have rut at very irregular intervals; second, when living with a male, unless pregnant, they are, in the majority of cases, covered every thirty days, causing the suspicion that copulation has an accelerating influence on rut.

*Ovulation.* — In answer to the question, Is ovulation spontaneous, the view generally held to be true among the females of mammalia, they hold that probably it is not, (1) because if a female rabbit has coitus during the rutting time several hours elapse before the rupture of the follicles in the ovary, and then a rupture occurs in the great majority of cases; (2) if coitus is prevented, follicles are rarely found ruptured, even after several days of rut.

Regaud and Dubreuil deny the statement of Villeminn that the follicles rupture in female rabbits who are separated from the male. In nine rabbits isolated in this way for six to seven weeks they were unable to find a trace of spontaneous ovulation upon examination of the ovaries. The authors think that ovulation is consecutive to rut and to coitus in other mammalia besides the rabbit, but in women it is certain that ovulation is spontaneous in a great number of cases; the influence of sexual excitement is probable, but remains to be proved.

*Menstruation.* — Ancel and Villeminn have adopted Fraenkel's theory that menstruation is caused by the activity of the corpus luteum. According to them, the Graafian vesicle bursts not at the time of the menses nor immediately before or after, but twelve or fourteen days before the onset of menstruation. The corpus luteum formed after the bursting of the follicle reaches its maximum of development two to four days before the menses begin; therefore, it is logical to admit that it is the internal secretion of this body that causes the flow. Moreover, corpora lutea are found in the ovaries only between puberty and the menopause. To this Regaud and Dubreuil reply that the Graafian follicles ripen and burst only between puberty and the menopause, and one might conclude, therefore, that the ripening of the follicles is the cause of menstruation, being careful to avoid the "*post hoc, ergo propter hoc*" argument. The chronology of ovulation and menstruation is notably inconstant, and to disprove Fraenkel's theory they cite the case reported by Mandl, in which a young girl, always regular in her menstruation, was operated upon the day before her expected catamenia. Premenstrual changes were found in the uterine mucosa and a large follicle in the ovary ready to burst, but no trace of a corpus luteum.

The structure of the corpus luteum does not vary much in different animals, and, therefore, if it is the cause of rut or menstruation in one animal, it ought to be in all. The conclusion is reached that the hypothesis that the corpora lutea are the glands of internal secretion is histologically probable. But these organs are not the the cause of rut in animals and very probably are not the cause of menstruation in woman. The subject is still open to investigation.

[It is to be noted that Fraenkel last September announced at the International Congress at St. Petersburg the results of further experimental research on this subject,[3,4] in which he thinks he confirms his previous theory and demonstrates that the corpus luteum has an internal secretion, is responsible for the rhythmical engorgement of the uterine organs preceding menstruation, and the changes in the endometrium which are essential for the embedding of the ovum. From observations at operations on the ovaries, he shows that the follicle ruptures about nineteen days after the beginning of the last menstruation; that about eight days later the corpus has reached its full development; that it begins to involute at the beginning of the next menstruation and that by the end of the menstruation it has disappeared entirely.]

### CARCINOMA OF THE CERVIX DEVELOPING AFTER SUPRAVAGINAL HYSTERECTOMY.

G. Uhl[5] reports a case of carcinoma of the stump of the cervix that had become inoperable when seen, developing after the removal of the body of the uterus and the ovaries ten years before for cancer of the ovaries. F. Weisse[6] adds another case. In this a patient of forty-five was operated upon in June, 1905, for multiple fibroids by the usual amputation of the uterus, leaving the cervix *in situ*, making a good recovery. In July, 1910, she presented herself with advanced cancer of the cervix, which was removed by a radical abdominal operation, with dissection of the parametrium and the lymph glands of the pelvis.

H. Hintertoisser[7] reported two cases and called attention to the association of fibroma and carcinoma in the same tumor, insisting on the importance of having the removed fibroid tumor examined microscopically during the operation,

so that should cancer elements be found in the cervical portion, the entire cervix uteri may be removed. This point has been emphasized by T. S. Cullen, of Baltimore.[8] This author[9] has observed carcinoma of the cervix associated with fibroids in 18 cases among the 1,674 cases of myomata examined by him.

C. Fleischmann[10] summarizes the cases of cancer developing in the stump of the amputated uterus reported in the literature, quoting Winter as giving the following undoubted cases in 1906: Schenk, 1; Jacobs, 2; Savor, 2; v. Erlach, 1; Freund, Jr., 1; Olshausen, 1; Tetzong, 1; Chrobak, 2; Kauffman, 1; Fleischmann, 1; Noble, 1; Quénu, 1; Richelot, 3. Olshausen (1907) added Pawlik, 1; Von Rosthorn, 1; Lumpe, 1. These added to the cases of Hintertoisser, Uhl and Weisse make a total of 25 authentic reported cases, without making any exhaustive search of the literature. Winter mentions additional cases as follows: Richelot, 1 (Mériel[11] says that in 1905 Richelot reported 6 cases); Von Hartmann, 1; Le Dentu, 2; Ch. Martin, 7, and Norris, "several cases." Therefore, we must conclude that these cases are of reasonably common occurrence, for only a portion of them, necessarily, appear in print.

### THE RELATION BETWEEN FIBROIDS AND CONCEPTION.

The subject of myomata in pregnancy, labor and the puerperium was discussed by Schauta, Engström and other noted German gynecologist, at the International Congress at Budapest in August and September, 1909. Since that time there have appeared in the literature several important articles bearing both on the relation of fibroids to fertility and on the general topic of fibroids complicating pregnancy and labor. For instance, A. Martin[12] says: The older authors held to the view that myomata hindered pregnancy, and in adding together the large number of reported cases of married women with fibroids who were sterile, as Olshausen did in Veit's Handbuch, the total is 1,504 women, of whom 482 were sterile, a percentage of 31. On the other hand, P. Muller, from the analysis of a large number, made the percentage of sterility 8–10. At the present time the frequent occurrence of myoma complicating pregnancy proves that the two conditions coexist more often than was thought when the opportunities for exact observation were less often afforded. We observe young women with rapidly growing tumors, and we see those suffering with flowing, pain and all the discomforts caused by fibroid tumors, still becoming pregnant, and the conclusion is justified that neither the situation, the size, the singleness or the multiplicity of the tumor can prevent conception. It is possible, as Hoffmeier has alleged, that myoma even increases the capability of conception by its stimulating effect on ovulation and menstruation. O. Goetze[13] has an exhaustive article on the relation between this bland tumor of the uterus and conception, making use of the material in the clinic at Greifswald for the two years from Nov. 1, 1907, to Nov. 1, 1909, as the basis for his conclusions.

First he analyzes his statistics for the purpose of throwing light on the question as to the frequency of fibroids. Among 1,500 women in the gynecological clinic, 122 had fibroids, or 8.1%. The percentage in the clinic at Tübingen is quoted as 10. In the following clinics both private and hospital patients are included; Hofmeier, 4.3%; Essen-Möller, 4.7%; Kleinwächter, 4.4%. Autopsy statistics gathered by Essen-Möller showed a presence of fibroids in 12.6% of all the bodies of women that came to autopsy, and Winkel had a percentage of 12.7 in similar circumstances. It would appear that fibroids are more often encountered among the private patients than in the hospital clinics, for Hofmeier had 9.7% in his private patients and only 4.1% among the patients in his public clinics, and Goetze, among 370 private patients, had 79, or 11.6%, while in the hospital clinic of 1,130 women, there were 43, or 7%, having fibroids. Most of his cases were between the ages of forty and fifty, the usual age when patients with fibroids apply for treatment.

Of the 122 women with fibroids, 105 were married and they were of the average age of 44.5 years. Of these, 22, or 21%, were sterile. This is to be compared with the figures of Hofmeier, 26.8; Löfquist, 33; Fraenkel, 26.5; Scipiades, 33.5, and the combined statistics of Olshausen, already referred to, 31%. In comparison, the author puts forward the facts gathered from 730 women attending the gynecological clinic who were between the ages of thirty and seventy years. In them the percentage of sterility was 6.95. Hofmeier found the percentage of sterility in all the married women of his gynecological clinics to be 11. Therefore, the author concludes that the presence of fibroids raises materially the percentage of sterility and that a definite though not exactly definable causation exists between myoma and sterility.

As to the number of children borne by the 105 women who were affected by fibroids, there were 327, or 3.1 per patient. The 730 married women of the clinic showed a fertility in number of children of 4.4 per patient, corresponding exactly with the number of children to a marriage as given in the Imperial Bureau of Statistics for Prussia.

The author concludes that small subserous myomata are no bar to fertility, and even large subserous ones do not prevent conception. The submucous tumors form the greatest hindrance to conception, and the more so the greater the changes in the endometrium and the greater the amount of flowing. The interstitial growths hold a middle place, while rare tumors of the cervix are less an obstruction to conception than the tumors of the body of the uterus. Should pregnancy occur, the myoma increases the danger of abortion.

T. Landau[14] contributes a most interesting monograph of one hundred and sixty-two pages and seventeen large and beautifully executed

plates in the elucidation of this subject. The same author published a treatise on the treatment of pregnancy and labor complicated by myoma in 1891, in which he formulated the principles of the pathology and treatment of this condition that are now, nearly twenty years later, generally accepted by the profession. The wealth of material at the command of the brothers Landau has afforded them exceptional opportunity, probably the best in Europe, for the study of myomata complicated by pregnancy and for the development of a good surgical technic in the treatment of fibroids. The development of the operative technic has shown great advances during the past twenty years. In 1885 Gusserow had a mortality of 122 among 395 operations on myomata, or 33.9%. In 1897 Olshausen, 45 deaths in 806 operations, or 5.6%, and the combined statistics of Winter in the year 1904 gave for 689 operations, 32 deaths, or 4.6%. Landau now reports 283 conservative and radical abdominal operations on myomatous uteri that he and his brother have performed in the last five years, the patients having all sorts of complications, with a mortality of 2 cases. [This is comparable to the results obtained by Kelly and Cullen in the Johns Hopkins Hospital.[5] In three years and a half up to Jan. 1, 1909, they reported 230 abdominal myomectomies or hysteromyomectomies, with 2 deaths.]

In this review we shall concern ourselves only with the first chapter of Landau's monograph, that on myoma and fertility. The remaining two chapters, on the relation between myoma and pregnancy, labor and the puerperium, and the surgical treatment of fibroids, are outside the scope of this article.

Landau considers that myomatosis uteri, contrary to the views formerly held, is often a disease of early sexual life, citing an article of his brother published in 1908, in which attention is called to the fact that among 400 of their fibroid cases operated upon for severe symptoms, 42 women were between the ages of twenty and thirty years.

As long as there is a passage for the spermatozoa to reach the ovum and a small portion of endometrium available for the embedding of the ovum, pregnancy may occur. The obstacles to conception are flowing and profuse leucorrhea and inflammatory affections of the pelvic organs, which may be enumerated as: (1) Active and passive hyperemia which attend the formation of myomata. (2) Infection. (3) The mechanical exfoliation of the surface epithelium of the tumor and thus the formation of adhesions. (4) Accumulation of blood in the tubes or the formation of hematosalpinx from the pressure of a myoma on the tube. The size, the situation or the number of the tumors which deform the uterus do not much matter so long as there is a way for the spermatozoa and the ovum.

Landau is not surprised to find on investigating the histories of their last 250 cases that 182 had been pregnant and 68 sterile. An analysis of the 68 showed that only 15 had marked disease of the adnexa, and in these there were perimetritis, perisalpingitis or perioöphoritis of very mild grade in 13, and the author is in doubt whether these inflammatory processes are the result of myomatosis or have developed in later years in women in whom pregnancy was barely possible or improbable; therefore, inflammatory processes in the pelvis in myoma are not to be considered seriously as causes of sterility. Inspection of the tabulated cases shows that among the 68 sterile women, myoma was the only pathological condition found in 40, and that in the remaining 28 some other factor must be sought as the possible cause of the sterility, and the mere fact that of the women upon whom operation was necessitated because of the presence of a fibroid, three fourths had been pregnant, proves that the alleged tendency of the myoma to cause sterility can exist in only a small proportion of the cases. Furthermore, it appears from the data in the author's tables that the fertile myomatous women who underwent operation exhibited changes in the adexa similar and to the same extent as those found in the unfertile, so that the presence of myomata in the uterus has no effect whatever upon conception. In refutation of the opinion that myoma disposes toward sterility, the author gives his observations in his 250 cases. Eighty-four of these had had more than 2 children, nine had 5 children, six had 6, three had 7, four had 8, one had 10 and one 13, by normal labors.

He does not think much weight ought to be attached to the combined statistics of different authors or the variations in private practice, in public clinics, or in different countries, for the same data are not secured in every case.

To the question whether fibroids may not occasionally in a certain proportion of cases diminish the capability of conception, the author answers that as it is impossible to get all of the facts as to the anatomical and mechanical relations of any particular tumor, the question is too broad to be considered. All myomata are intramural or interstitial in the beginning and become submucous or subserous by the contraction of the uterine muscle fibers; the tumors move about in the course of time and, therefore, a myoma may cause obstruction of the uterine cavity or the Fallopian tube at one time, and, by its gradual migration, the obstruction may be removed later, or the reverse may prove true.

Notwithstanding the definite statement of the percentage of sterility in fibroids in general, no definite prognosis can be formed for the individual case because daily observation shows women who, according to theoretical considerations and the general principles laid down, should be incapable of conception, nevertheless they are pregnant. Therefore, Landau is of the opinion that myomatous women should be advised to marry.

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# Reports of Societies.

## NORTH CENTRAL SECTION OF THE AMERICAN UROLOGICAL ASSOCIATION.

MEETING HELD AT THE GREAT NORTHERN HOTEL, CHICAGO, JAN. 5, 1911.

THE President, DR. R. H. HERBST, of the Chicago Urological Society, in the chair.

### POSITION DRAINAGE IN SUPRAPUBIC PROSTATECTOMY.

DR. HENRY J. SCHERCK, St. Louis, Mo.: To my mind the question of drainage has always been the main objection to the performance of the suprapubic method. The inspiration for the abdominal position after suprapubic prostatectomy came to me by observing a colleague perform the Gilliam operation in which the position described was utilized. All drainage of suprapubic bladder wounds depends either upon syphonage or suction. My observation covers five cases recently operated upon by the suprapubic method. The principal objection to the ordinary form of drainage, either syphon or suction, is that it does not completely empty the bladder of decomposed or septic urine, and allows it to become absorbed in a freshly wounded bladder and space of Retzius. The abdominal position does not allow the septic material to remain in contact with these surfaces, and this minimizes the chances of absorption.

#### DISCUSSION.

DR. L. W. BREMMERMAN, Chicago, demonstrated an apparatus which consists of an arrangement by which he can drain the bladder suprapubically or perineally, as the case may be, by automatic interrupted siphonage. During the first twenty-four hours following suprapubic prostatectomy the bladder can be emptied every five minutes, keeping it dry and keeping the dressing on the abdomen practically dry and making the patient comfortable.

DR. GUSTAV KOLISCHER, Chicago: I firmly believe that position has nothing to do with the development of post-operative pneumonia, and the only way to prevent this condition is by proper breathing exercises, with the patient lying on the back or sitting up. The position described by the essayist was used in various conditions years ago, as, for instance, in cases of peritonitis, and in spite of it, many patients developed hypostatic pneumonia. What are the dangers following suprapubic prostatectomy or any suprapubic operation? One is post-operative hemorrhage, and the other is infection around the bladder.

DR. E. G. MARK, Kansas City, Mo.: The first thing we have to look after following suprapubic operation of any kind is hemorrhage; second, infection or infiltration into the abdominal wall or perivesical tissues, and, third, hypostatic pneumonia. I cannot agree with Dr. Kolischer that position makes no difference in regard to lung cases, because I have had the misfortune within the last week to lose my first case of suprapubic work from hypostatic pneumonia. It was a case in which gas anesthesia was used, and I am convinced that in this case position had a great deal to do with the development of the pneumonia.

DR. RUTHERFORD B. F. GRADWOHL, St. Louis, Mo.: I think the method of drainage described by Dr. Scherck is admirable in respect to the prevention of hypostatic pneumonia.

DR. ARTHUR DEAN BEVAN, Chicago: Suprapubic drainage is very much better carried out in a simple and effective way either after an exploratory bladder operation, a suprapubic stone operation or a suprapubic prostatectomy. I am employing this simple method: I take a tube about the size of the index finger, measuring it accurately, so that it will project three quarters of an inch into the bladder; then I take a fine catgut suture and introduce it into the suprapubic wound, stitching both above and below the tube. It almost invariably requires but a single suture above and a single suture below the tube. This suture passes through, first, the bladder wall, and, second, takes a good bite of the tube and goes through the opposite wall, and is then tied in the space between the bladder and symphysis where we tuck in a small cigarette drain with iodoform gauze, projecting beyond the gutta percha.

DR. SCHERCK (closing): The main objection to suction is the minute air gets into the tube the suction does not work. The tube that is introduced into the bladder wound must be short. I agree with Dr. Bevan except with the addition, that I put the patient on the belly to facilitate drainage.

### GENITAL TUBERCULOSIS.

DR. F. W. ROBBINS, Detroit, Mich., reported twenty cases of genital tuberculosis, and in only two of them was there a possibility of tracing the relationship between the condition diagnosed tubercular epididymitis and a previous gonorrhea. In neither of these patients was the tubercle bacillus found, and the diagnosis of tuberculosis may well be questioned, although he was very suspicious in both instances. The twenty cases were then related in detail.

The author shows that rarely does genital tuberculosis follow venereal disease; that about 60% of cases of genital tuberculosis are a part of the general tubercular infection; that occasionally the disease may be so located in the external genitals as to make radical operation wise, but more often the disease of the external organ is associated with that of the prostate and vesicals, even when the bladder and kidneys are healthy; that in view of the effect of guaiacol in relieving urinary irritation, and of tuberculin and proper hygienic conditions, in increasing the resistance of the individual, it is seldom good practice to do the extensive operation recently so brilliantly described by Dr. George Whiteside.

#### DISCUSSION.

DR. HUGH CABOT, Boston: In regard to genital tuberculosis, my conclusion has been practically the same as that of Dr. Robbins. I have seen several cases in which tubercular epididymitis occurred in patients who had had gonorrhea, but many people have acquired gonorrhea accidentally. I have never seen a case in which it occurred in such a way as to suggest to me that gonorrhea was the cause of the subsequent tuberculosis, even to the extent of lowering vitality. In regard to age, I was surprised this year to see a case of double epididymitis in a child one and a half years old. I was doubtful about the diagnosis. I was moved to explore, and a diagnosis was made by the microscope. Both epididymes were involved. The vas was not implicated on either side, and there was no involvement of the vesicals or prostate.

Dr. Daniel N. Eisendrath, Chicago: My experience is somewhat different from that of Drs. Robbins and Cabot. In two cases I distinctly recall there was a direct relation between gonorrhea and tuberculosis. There were two factors which influenced the clinical picture. First, in both cases a preceding gonorrhea had seemingly furnished the ground for the localization of the tubercle bacillus; second, it looked in both cases as though the tuberculosis came on top of the gonorrhea, which took a more acute course than it would as we ordinarily see it. One case, treated for two months, had a greenish typical discharge containing gonococci, and this was accompanied by enlargement of both epididymes. In one case the thing that attracted attention was an abscess which ruptured through the scrotum. We examined the pus for gonococci and found them, and did not suspect at first there was tuberculosis. The whole process lasted, before I saw the patient, two months. I advised antigonorrheal treatment, and this was continued for another two months without benefit. We examined the pus discharge for tubercle bacilli, suspecting that the cause was not purely one of gonorrhea, and found a large number of them. We followed this case to autopsy. The whole course lasted about a year, at the end of which time the patient died from uremia, and autopsy showed extensive tuberculosis, a mixed infection not only low down where we had removed the epididymis, but mixed infection of the kidneys, also showing gonococci, tubercle bacilli in the kidneys, pus and a stone in the kidney.

Dr. R. H. Herbst, Chicago: A man came to the clinic at Rush Medical College in January of last year with a large nodule in the upper pole of the epididymis, the size of an English walnut, in the region of the external ring, and painful. There were two nodules in the prostate, and he had frequency of urination. He was put on tuberculin, and has been treated off and on with it ever since, and at the time I presented the patient to the Chicago Urological Society his cord was clinically free, the nodule at the external ring had disappeared, and the nodules in the prostate had likewise disappeared, as well as the frequency of urination, one week after treatment. He still has a small nodule in the upper pole of the epididymis as large as a hazelnut. We suggested that this nodule be removed, but he refused to have it done. We have kept on with tuberculin since, and the result has been good. I think tuberculin, if used in the treatment of these cases properly, is valuable, and should be used in almost every case, because our results with surgical interference have not been as good as they have with this form of treatment, plus hygienic treatment.

Dr. G. Frank Lydston, Chicago: I recognize it is not an easy matter to prove the association between gonorrheal infection and septic tuberculosis, and we have to fall back on the rules of logic. A large majority of cases of genital tuberculosis we meet in the city have been preceded by gonorrhea. Patients have been infected at one time or another with gonorrhea, and they come to us with the belief that the tubercular trouble is more or less of gonorrheal origin. If it is true that gonorrheal infection, as it is true of all other infections, reduces resistance and does not predispose to tuberculosis, then we have a rule that differs from all other rules with reference to tuberculosis. An individual with a lowering of the power of resistance in the mucosa, other things being equal, is particularly susceptible to infection by the tubercle bacillus. The chief argument against the relation of gonorrhea to tuberculosis of the urogenital tract was missed altogether by the opponent of that theory, and that is that infection, as a rule, is descending, coming from the kidney, and from the substance of the kidney, rather than from the pelvis, excepting secondarily. Gonorrheal infection of the kidney is relatively exceptional, as contrasted with the sum total of cases of gonorrhea.

### DIFFICULTIES AND LIMITATIONS OF DIAGNOSIS IN ADVANCED CASES OF RENAL TUBERCULOSIS.

Dr. Hugh Cabot, Boston, read a paper on this subject.

### DISCUSSION.

Dr. Arthur Dean Bevan, Chicago: I am accustomed to divide these cases into three groups, namely, those which are distinctly genital tuberculosis; those which are distinctly urinary tuberculosis, and the difficult cases that are on the border line, where it is difficult for us to determine, in the first place, whether the origin is genital or urinary, and to determine at the time of the examination the extent of involvement, whether it is limited to one or two kidneys, whether the kidneys and ureters are involved, or whether the kidney, the bladder, the prostate and epididymis are implicated. It has been shown that these cases of genito-urinary tuberculosis originate in one of three positions, either in the epididymis, the prostate or kidney. In cases of genital tuberculosis, if we are quite certain there is a definite gross focus which overshadows everything else in the case, as, for instance, the epididymis and vas, it should be removed. On the other hand, I am quite certain that general hygienic treatment is quite as valuable, if not more so, than surgical intervention. In the classical, typical case, where modern methods of diagnosis will enable us by cystoscopic examination and catheterization of the two kidneys to obtain the urine separately from each kidney, where we can at once definitely locate the lesion in one kidney, modern surgery demands nephrectomy.

Dr. Rutherford B. F. Gradwohl, St. Louis, Mo.: I would make a plea for continued unremitting efforts with the catheterizing cystoscope to make an early diagnosis in this condition. A recent case, in which I was associated with Dr. Bransford Lewis, illustrated that. The patient had a history of frequent micturition for a year and a half. He had been under the observation of two practitioners for several months, who made every effort to make a diagnosis except by the aid of the catheterizing cystoscope. They examined the urine repeatedly, but were not able to come to a conclusion as to whether the case was tuberculous or not. Finally, by catheterizing the ureters, Dr. Lewis found urine from the right side cloudy with pus, and the left side was clear. Tubercle bacilli were demonstrated by animal tests in the right kidney, and a large ulcerated kidney was removed. From the standpoint of my experience in bacteriological and laboratory investigations of these cases, the quantity of tubercle bacilli thrown off in these cases has no relationship to the extent of the lesion, which may account, in a measure, for the difficulties in diagnosis.

Dr. Gustav Kolischer, Chicago: Catheterization of the ureters and observation of the ureteral openings through the examining cystoscope should be done in doubtful or difficult cases only after tuberculin has been injected. As to functional tests of the kidney, Dr. Louis Schmidt and I have pointed out that they are absolutely unreliable in a positive and negative sense, as we cannot prove by these tests that a kidney is insufficient. This was proven in two cases which Dr. Schmidt and I examined together.

Dr. Daniel N. Eisendrath, Chicago: A patient was sent to me with a diagnosis of suspected tuberculosis of the kidney on account of tubercle bacilli

having been found in the urine, the bladder being negative. This patient had a series of chills, fever and sweats, which came on at irregular intervals, simulating an ordinary colon bacillus pyelonephritis. The clinical picture was such that for a long time we doubted the diagnosis of tuberculosis, in view of the fact that repeated examinations, after a positive single finding of tubercle bacilli, showed no tubercle bacilli. Cystoscopic examination was negative, but ureteral catheterization showed pus coming from one kidney. We exposed this kidney. I incised the capsule. I saw no evidences of tuberculosis on the surface of the kidney, and the blood flowing from the cut in the capsule so obscured our view for a few seconds that it was impossible to tell whether or not there was any tuberculosis present. Having taken the precaution to put hemostats on the pedicle of the kidney, the clots were wiped off, and then exploration showed that there were a number of caseous foci low down close to the lower pole that we had not seen on account of the fact that the clots of blood obscured them. This case emphasised the necessity of hemostasis when there is an exploratory operation done and foci are not evident.

The paper was also discussed by DR. E. G. MARK, Kansas City, and in closing by DR. CABOT.

DR. WILLIAM N. SENN, Chicago, exhibited and demonstrated an operation cystoscope of his design.

### TREATMENT OF SYPHILIS WITH "606."

DR. CARL WAGNER, Chicago, has come to the following conclusions, after a personal visit to Ehrlich at Frankfort, Schreiber at Magdeburg, Weintraub at Wiesbaden, and Gennerich at Kiel: "606" is most actively and painlessly applied as an intravenous injection by the aid of the Cassel syringe. The duration of the treatment should not be less than six minutes. The advantages over mercury are: (1) People who, for some reason or other, will not submit to inunction or to any protracted treatment, are more apt to try a single injection of "606," and, if the infection is primary, may be cured permanently. (2) In doubtful cases, where a primary lesion has not yet developed, but the patient has been exposed to syphilitic infection, "606" may be considered. One single dose may act as a preventive. (3) In primary cases, especially if excision of the initial lesion can be combined with a full dose of "606," it might prove abortive, if used early, because the spirochetæ are not blood parasites, but pass only once through the blood current, and quickly nestle in the tissues. (4) Most cases, which do not respond to mercury any more, and cases of real malignant syphilis, have certainly found in "606" their true friend, because with "606" spirochetæ do not exist, according to the more careful observers. (5) With "606" we cure, without any risk, the fetus in utero and the newborn through lactation of the injected mother, which must be considered as one of the most wonderful properties of "606." (6) "606" has a special elective effect upon diseased tissue, as observed in the good results obtained in psoriasis, lichen simplex verrucæ and so on. (7) We must mention the strong tendency to epidermization, even in the most obstinate and inveterate cases. If we further consider the disposition of the spirochetæ in regard to where they settle in the lymphatic spaces and tissues, and where they surround themselves with a wall of connective tissue, then any means which can cause the spirochetæ to break through this wall and effect a flow of lymph through this depot again must be considered a great aid in wiping out such syphilitic deposits, as then "606" can reach them. Such exists in fibrolysin, which, therefore, might be combined with the general treatment.

### DISCUSSION.

DR. R. H. HERBST, Chicago: My experience with this remedy has been limited to cases of early syphilis, and to the use of the remedy in neutral suspension by either subcutaneous or intramuscular injection. My cases were all Wassermann positive previous to injection, and all showed spirochetæ in smears. The Wassermann reaction following the injection became negative as early as the sixteenth day in one case, and as late as the eighth week in another. Others varied between these periods. The syphilis was probably more marked in the mucous membrane lesions, such as mucous patches, anal ulcerations, intra-urethral ulcerations and so on. The skin manifestations, indurations, adenopathies, etc., did not disappear any more rapidly than with good mercurial treatment. In fully 80% of my cases I have seen recurrence at the present time. These recurrences have taken place as early as three weeks after the injection. The dosage varied from 4½ dcgm. to 6 dcgm.; some were injected subcutaneously, while most of them were injected intramuscularly.

DR. LOUIS E. SCHMIDT, Chicago: I have had experience in treating twelve cases with "606," and of that number there was one that I considered cured. In this case the symptoms and signs disappeared following the first injection, three months ago.

DR. HENRY J. SCHERCK, St. Louis, Mo.: Our experience in St. Louis has been limited to sixteen cases. The cases were selected on account of the virulency of the infection and the stubbornness of the lesions. Very careful examinations were made, and Wassermann tests were made before and after injection. Dr. Engman, who is a careful observer, reported his findings recently, two or more months having elapsed since these patients were injected. Our impression is that recurrences are the rule after the use of salvarsan. In only two or three cases, at the outside, has the result been phenomenal, and in one of these, unfortunately in the last few days, evidences of recurrence have manifested themselves. In one case of a man with a large gumma of the calf of either leg and forearm, the result was phenomenal. The whole business cleaned up in the course of two or three weeks. This is one case in which there has been no return, but in the majority of cases there has been a recurrence.

### A CASE OF AIR EMBOLUS OCCURRING DURING OPERATION UNDER AIR-INFLATION URETHROSCOPY.

DR. ERNEST G. MARK, of Kansas City, Mo.: In the use of air-inflation urethroscopy for work in the urethra within the past year I have observed certain localized emphysematous symptoms to arise and believe, therefore, that certain dangers may ensue therefrom. Fenwick, in urethroscoping under air inflation a case of stricture complicated by a recent false passage, noted an emphysematous condition to arise and speculated on the possibility of certain associated conditions due to the unfiltered air passing into the tissues. The case which forms the basis of this paper was that of a patient in whose urethra there was present a small band-like stricture on the floor of the urethra just anterior to the penoscrotal junction. In operating upon this patient under air inflation, after division of the stricture there was a localized emphysematous condition in the neighborhood of the stricture and almost immediately the patient complained of pains in the epigastrium and began to cough. He became rapidly cyanotic and the radial pulse became imperceptible. Auscultation over the cardiac area revealed the "whirr" of what was apparently considerable quantities of air passing through the heart. The heart sounds apparently ceased and respiration

progressively ceased as in the dying. The pupils were fully dilated and the eyes were fixed; the lower jaw was dropped. In fact, the whole appearance was that of a cadaver. Under artificial respiration and the hypodermic use of whiskey the patient began to slowly recover consciousness. The feeling of depression in the epigastrium was still complained of and this condition lasted for about a week. Local emphysema was not greatly marked and seemed to involve only the cellular tissue of the pendulous urethra. There was no emphysema of the scrotal tissues. The following day the patient complained of tenderness in the hypogastrium, especially marked on the left. Examination revealed a fairly extensive emphysema of the abdominal wall which slowly disappeared in about one week. I believe there can be no question but that the causative factor of the serious symptoms in this case was air embolus. The amount of air which was forced into the circulation without a fatal issue is, however, astonishing.

LOCAL PARESIS OF THE URINARY BLADDER.

Dr. Gustav Kolischer and Dr. Harry Kraus, Chicago, contributed a joint paper on this subject. There are certain cases of paresis of the bladder that are caused by edema of the bladder wall. This edema may be produced by gross mechanical interference with the circulation by the impaction of tumors, whether they are a pregnant uterus, or any other uterine tumor, or an ovarian tumor. Or this edema is the consequence of inflammatory changes in the adjacent organs. That the bladder is paretic is shown by the fact that catheterization alone does not lead to a satisfactory emptying of the bladder, but that outside pressure has to be resorted to in order to express all the urine. That the edema of the detrusor is the cause of the vesical paresis is proven (1) by the cystoscopic findings; (2) by the palpatory findings after the bladder was drained; (3) that there are no disturbances of the central nervous system to be found; (4) that this bladder paresis disappears without any special treatment after the factors that interfere with the circulation are removed, whether they have been purely mechanical or of inflammatory character.

THE CAPUT EPIDIDYMIS AN EXCRETORY ORGAN.

Dr. William T. Belfield, Chicago: The head of the epididymis is a part of the middle kidney, which functions as a kidney in frogs and fishes, but is superseded in man by the permanent kidney. The efferent tubules constituting the head of the epididymis are the convoluted tubules of this early kidney. That they are secretory organs is indicated by the motion exhibited on traversing these tubules by the previously motionless spermatozoa. Their excretory function is indicated by the infection of these tubules with various organisms derived from the blood, e. g., those of tuberculosis, syphilis, typhoid fever and colon bacilli. These infections may extend along the genital tract to the prostatic urethra. Until recently, all infections of the kidney were assumed to ascend from the bladder. It is now known that many infections of the bladder descend from the kidney. Similarly we have been accustomed to regard all infections of the genital duct as ascending from the deep urethra; but must realise that in certain cases these infections begin in the convoluted tubules (head) of the epididymis and descend to the vesicles and deep urethra, there being a complete analogy between the second kidney (caput epididymis) and its duct on the one hand, and the third (permanent) kidney and its duct on the other. Hence to limit treatment of all genital duct infections to the prostate and vesicles is as irrational as to limit treatment of all urinary infections to the bladder.

## Book Reviews.

*The Essentials of Histology*, Descriptive and Practical, for the Use of Students. By E. A. Schäfer, M.D., Sc.D., LL.D., F.R.S., Professor of Physiology in the University of Edinburgh. Eighth edition. Philadelphia and New York: Lea & Febiger. 1910.

This book, now in its eighth edition, is firmly established in popular favor as a concise, well-arranged and admirably illustrated treatise on the microscopic anatomy of body tissues. It is essentially a textbook, and as in previous editions is arranged in lessons, fifty in number, each lesson being preceded by instructions to the student regarding the making of preparations and the particular objects to be studied. In spite of certain additions, especially of illustrations, the volume is of convenient size and weight, printed on somewhat thin paper, on which the cuts are excellently reproduced. It is an unusually good piece of book-making.

*Studies in Invalid Occupation.* A Manual for Nurses and Attendants. By Susan E. Tracy. Boston: Whitcomb & Barrows. 1910.

This volume, the product of a series of practical studies in the classes of the Training School for Nurses of the Adams Nervine Asylum, Jamaica Plain, Mass., presents interesting suggestions in guiding the occupations of "typical invalids," who are appropriately described under such captions as "the child of poverty, the child of wealth, the orthopedic patient, the patient in quarantine, the one-handed, the impatient boy, the grandmother, the business man, the pregnant woman, the blind and the insane." Occupation is the balance-wheel of life, and to provide it for those who are temporarily or permanently deprived of opportunity for normal human activity is one of the important and often most difficult duties of the nurse. To provide it wisely may mean the saving of life by making it tolerable. The present book seems a valuable aid to this desirable end. It is well written and illustrated, and has an admirable introduction by Dr. Daniel H. Fuller. The author deserves great credit for her work, which should be of help and use to all who have the care of invalids.

*Medical Electricity and Röntgen Rays*, with Chapters on Phototherapy and Radium. By Sinclair Tousey, A.M., M.D., Consulting Surgeon to St. Bartholomew's Clinic, New York. Philadelphia and London: W. B. Saunders Company.

As a first impression of this work, the reader is convinced that nothing has been omitted which can properly be embraced under its title. That portion dealing with the subject of medical electricity occupies a good half of the book and

may be said to be as complete an exposition of the theory and practice of this branch of medicine as there exists to-day. The theories of the principles of static and dynamic electricity are made most clear by the use of tables and diagrammatic charts; all necessary equations are printed so that they seem, at least at first glance, not too complicated. In short, this part of the volume is adapted admirably for the use of him who has not the theoretical training of an electrical engineer, but is called upon to use in practice the forces of electricity as therapeutic agents.

Dr. Tousey's ability to deal clearly with matters more abstract in nature has empowered him lucidly to present the involved theories of the Röntgen rays. In his consideration of certain practical applications of them, on the other hand, he is confusing, to say the least, to the seeker of information. He has, for example, inaugurated a scale of intensity of x-radiance, for the unit of which he has contributed his own name. The use of so arbitrary a unit, in comparison with the generally accepted units of Kienbock, Sabouraud and Noire, Benoist or Walter, will naturally be confusing and uncertain until it shall have become accepted by some scientific body of Röntgenologists.

The author's illustrations of his Röntgenographic work in some of the more modern fields, for instance, the stomach and intestines, are disappointing, and we find it hard to become enthusiastic over the effect of the use of the Tousey cylinder and diaphragm upon the radiographic results.

In his consideration of the radiography of the mastoid cells, he makes no reference to the published work of Lange, who has devised the best technic in this branch of the work.

Dr. Tousey's illustrations on teeth are admirable, although his technic, as he describes it, exposes the operator unnecessarily.

With a few exceptions, the list of references to the literature is a complete one, and these, together with the admirable index, show much care in their preparation.

*The Modern Treatment of Alcoholism and Drug Narcotism.* By C. A. McBRIDE, M.D., L.R.C.P.& S. (Edin.) New York: Rebman Company. 1910.

This book, though not particularly well written, presents an interesting study of inebriety as a disease, its pathology, causes, forms and treatment. The author's method of dealing with alcoholism is by a combination of diet, drugs, hydrotherapy and moral suasion. He outlines the routine course of this treatment, with description of its more important variations according to the type of the disease. He also discusses the travel cure, the fruit cure and the restraint cure, with special sections on the treatment of delirium tremens and alcoholic trance. There is brief consideration of the nature and treatment of morphinism and of ether, chloroform, tea, coffee and opium inebriety. The volume seems a useful contribution to a very important subject, representing, as it does, the results of thirty years successful personal experience in the treatment of alcoholic and drug inebriates.

*Those Nerves.* By GEORGE LINCOLN WALTON, M.D. 12mo. Pp. 203 with a portrait of Marcus Aurelius. Philadelphia and London: J. B. Lippincott Company. 1909.

"Certain subjects introduced in a previous publication will bear further elaboration," says the writer in his preface, adding that long-standing faulty mental habits are to be modified only by reiteration and repeated presentation of useful suggestions. The author, therefore, takes up various forms of morbid mental activity, pointing out the evil effects and the lack of any actual benefits which such obsessions and morbid fears bring about, and giving wholesome advice as to healthy modes of thinking. The consideration of these conditions is enlivened by many apt quotations and touches of humor, and the author's attitude is characterized by the same good sense and avoidance of psychic obscurity that was so noticeable in "Why Worry?" In the present volume, however, there is some tendency toward somewhat far-fetched comparisons and too much of a disposition to regard all aversions, fears and depressions as simply obsessions which indicate a psychasthenic state, without sufficient allowance for normal mental reactions. Nevertheless the advice is sound and may sometimes be of benefit, were it not for the fact that the numerous quotations from Epictetus remind us that sound advice has been given to mankind for many centuries, and that few of those who need it are disposed to follow it.

*Fractures and Separated Epiphyses.* By ALBERT J. WALTON, F.R.C.S. (Eng.), M.S. (Lond.), L.R.C.P., M.B., B.Sc. (Lond.), Surgical Registrar, London Hospital. New York: Longmans, Green & Co. London: Edward Arnold.

Frequently it occurs that the painstaking reviewer finds upon his desk a book which is excellent but offers little for comment, — a book dealing soundly with well-known important topics which must be studied by all undergraduates as well as by general practitioners. The book now under review is a case in point.

It is an admirable production of 288 pages and presents lucidly, though somewhat briefly, the topic of fractures. As Walton says in his preface, "Students and those first commencing hospital appointments have often mentioned to me their need of a small book dealing with the more practical aspects of fractures. This book is an attempt to supply such a want." He supplies it very well indeed. He discusses various aspects of fractures, for the book is not a mere compend of treatment. There are numerous x-rays, photographs and sketches which illustrate well the subject. We heartily commend the work.

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## REPORT OF THE COMMISSION ON FACTORY INSPECTION.

THE report of the Massachusetts State Commission appointed last year to investigate the general subject of the inspection of factories, workshops and other establishments was recently submitted to the legislature.

We shall limit our review of the report to that portion which deals with the health inspection carried on under the State Board of Health and comment on the Commission's conclusions and recommendations in so far as they affect the work of that board. The Commission's report on the work of the State Inspectors of Health is in many ways misleading, in some respects inaccurate and is quite inadequate. In a section devoted to the "Inspection Service of the State Board of Health" the organization of that service is described at length and considerable detail is given as to the printed forms used, the manner of submitting reports and records to the main office, and the methods of filing cards, but no statement can be found about the actual work done by the State Inspectors of Health, including the changes made to improve the sanitation of factories and workshops as the result of issuing recommendations or orders.

To one who is unfamiliar with the work of the State Inspectors of Health the impression might readily be gained that these physicians are giving a limited number of hours per week to the state and that "the chief work that the inspectors are now doing consists in the collection of data relating to industrial hygiene or occupational diseases." The Commission hasten to add that they "would say nothing in derogation of the value of this study to the human race, and more particularly to that part of the working class engaged in so-called unhealthy occupations," and that this work "would, if carried on in the future, prove of great value to the working population of the Commonwealth." The impression is thus given that these physicians who give a limited number of hours to the state are engaged principally in some sort of an academic investigation which will ultimately prove of some value to the human race. Now what are the facts? The majority of the State Inspectors of Health, particularly those in the industrial districts, give the greater part of their time to the work. Many of the men average from six to eight hours daily, a good deal more time than could reasonably be expected from some of them considering their salaries. The chief work in which these physicians are engaged, "the collection of data relating to industrial hygiene or occupational diseases," is not an academic investigation without immediate practical value, but is the only kind of health inspection worthy of the name. Efficient inspection cannot be carried on in a routine manner. The only purpose of inspecting the sanitary conditions in industrial establishments is to safeguard the health, first, of the workers and, second, of the community at large. The study of occupational hygiene in each establishment consists of a careful study of all the influences in that establishment which may be injurious to the health of the workers. Such a study involves a knowledge of the sanitary conditions, including the adequacy of lighting, ventilation and cleanliness, of the establishment, as well as some knowledge of the various industrial processes in which the operatives are engaged. This work in every instance leads to practical results: if any unsanitary conditions are found, if any processes are conducted wherein employees are exposed to injurious influences, orders are issued, or, in case no specific statute covers the case, recommendations are made to provide for the necessary changes. The data relative to occupational diseases are of the utmost practical immediate value, for how can we know what processes must be protected, what processes are dangerous, unless we learn the effects on the health of the operatives engaged in these processes?

The criticism that at the present time there is little system, "that health inspectors in some cases visit the same establishment several times during the year and other establishments not at all," is based upon a superficial knowledge of the inspectors' work, and is answered in the Commission's summary when they refer to the

policy of the State Board of Health as that of encouraging "intensive work in the part of the field actually covered, rather than to attempt to cover the entire field in superficial and ineffectual fashion." And it is just because the work is done in such a thorough and systematic manner that in several of the districts a "single round" of the district has not yet been completed.

It is quite true that the State Inspectors of Health might to great advantage have non-medical assistants for some of the routine work, but such inspectors could not take the place of men trained in the science of hygiene and preventive medicine. Some of the most valuable work which the State Inspectors of Health have done has been along the line of education of both employers and employees. This work, while it does not lend itself to tabulation, is none the less valuable, and could not be done by non-medical men.

We have said that the report is in some respects inaccurate; two examples will suffice: (1) Among the criticisms reported as brought before the Commission is one that "no department professes to inspect toilets in factories, workshops" and "mercantile establishments . . . for their sanitary condition," and this criticism, notwithstanding the fact that the State Inspectors of Health are legally authorized to make such inspections, and that more than one thousand new toilets have been installed as the result of their efforts. (2) In the supplementary suggestions the report says: "The lack of authoritative information regarding the number and location of factories, workshops and mercantile establishments, especially tenement workrooms, leaves many loopholes for evasion of the labor laws. It would seem to be the first task of a board entrusted with the administration of these laws to inform itself concerning the exact extent of the field in which its work lies; and this task involves registration of all industrial establishments under its jurisdiction." The report also states that at present there is no complete list of industrial establishments in any district in the Commonwealth. Here again we see the lack of thorough acquaintance on the part of the Commission with the work of the State Board of Health. The fact is that in many districts the State Inspectors of Health have made a complete registration of all factories and workshops. Moreover, all the tenement workrooms throughout the state are, practically speaking, completely registered; while in the Suffolk County district, where there are about fifteen hundred of these workrooms, all are carefully registered and indexed so that the number of the workrooms in any street or any building in the district can be had on reference.

The conclusions and recommendations of the Commission, based upon their own findings and criticisms, are not justified. In spite of the superficial manner in which the work of the State Inspectors of Health was dealt with, "the members of the Commission recognize that the work of health inspection in manufacturing and mercantile establishments has been efficiently organized and directed under the State Board of Health, and that valuable results have already been achieved in this field." At the same time, the Commission find that "the factory inspection as at present conducted by the inspectors of the district police is ineffective." The Commission reason, however, from these two premises that unless a new board of industrial inspection is created to carry on the factory inspection work now done by the district police, and the medical inspection of factories supervised by the State Board of Health, "the dual control which is chiefly (?) responsible for the unsatisfactory working of the present system would still exist."

If, as is alleged, the present apportionment of duties and powers between the two staffs of inspectors is "complex and confusing," the legislature can remedy the situation by a far less radical and more economical way than by the creation of a new bureau. The argument that the entire service of inspection could be directed and organized more economically under one head is not convincing. The creation of four offices to be occupied by high salaried officials, the appointment of seventy-six inspectors instead of the present force of forty-two, and, in addition, the organization of a new office force, can hardly be considered an economic venture for the state. But even if a bureau of industrial inspection were created, there is nothing in the Commission's report, assuming all criticisms of the existing health inspection to be valid, that would justify the conclusion that there is need of transferring the health inspection work of the State Board of Health to such a board. The many valid reasons why such an important branch of the public health service as the health inspection of industrial establishments should not be taken from the central health authority of the state have been made clear in the reports and bulletins published from time to time by the State Board of Health to which we have frequently called the attention of our readers.

Moreover, it is noteworthy that the commis-

sioner of the Chicago Department of Health, recognizing the system of medical inspection of factories as organized by the Massachusetts State Board of Health, and the fact that Massachusetts has done more than any other state in the way of sanitary inspection, in a late bulletin relating to the state of Chicago's health, says: "It is to be hoped that both the city and state will at no distant day through proper legislation incorporate and put into thorough working shape a public service of this kind."

## PHILANTHROPY, MEDICINE AND THE LIMITATION OF FAMILIES.

In an editorial on "Large and Small Families" in the issue of the JOURNAL for Feb. 16, we commented on some differences of opinion in regard to the desirability of unlimited procreation among the poorer classes of the community. In the March number of the *Popular Science Monthly* is a thoughtful though somewhat pessimistic article on "The Social Problem," by Prof. John J. Stevenson, of New York University, in which, after analyzing and summing up the social and economic evils of American civilization, the author states his opinion that the only alleviation for these conditions lies in the restriction of immigration and the limitation of offspring among the poor.

"The early settlers of this land had large families," he says, "and the children were strong physically and mentally. But they were a fine stock, and, like all pioneers, they were the best of their race — and natural selection came to their aid. . . . No such selection exists in the class under consideration [the immigrant poor in large cities], which, unfortunately, lacks the original physique. More than that, pure food laws, sewerage, proper construction of houses, sanitary regulations and the rest antagonize the operations of natural laws, whereby the sins of the parents are visited upon the children. Those who, under former conditions, would have died in infancy, now survive the perils of the earliest years, in increasing proportions reach maturity, marry and reproduce themselves — a menace to the health and well-being of the community. . . . Philanthropic work, in endeavoring to ameliorate the pangs of poverty, begins at the wrong end; instead of trying to abolish poverty, it labors incessantly to increase it and its burdens. The improvident class procreates recklessly, and would-be philanthropists encourage the folly. . . . Tenements are made better every year to protect the careless against their own negligence; public schools are inspected that contagious diseases may be checked; vaccination is compulsory and free; women in confinement have free medical attendance and diet kitchens provide proper food for them. . . . Everything within the range of possibility has been suggested or attempted in order to free the improvident from all sense of responsibility for their offspring. . . . Philanthropy should begin its work at the other end. . . . Instead of encouraging heedless procreation, its efforts should be to encourage restriction. The duty of parents to children should be made plain to those who are unwilling to recognize them; and indiscriminate free medical treatment should be abolished. . . . Marriage of persons mentally or physically defective should be illegal, and increase of the criminal or vicious should be made impossible by aid of the surgeon."

Professor Stevenson's arraignment of modern philanthropy is severe; but his recognition of conditions is clear-sighted, even though one may not concur with his suggestions of remedy. Of course he does not mean to abate the beneficent activities of sanitation and hygiene and preventive medicine. For though no doubt much modern charity and so-called social service is meddlesome and misdirected, and though it often seems that medical science merely makes possible the survival and increase of the unfit, it must be remembered that many of these measures also improve the environment of the fit and become for them important means of advance and of self-protection. Whether one agree or disagree in whole or in part with Professor Stevenson's views, however, their expression is valuable as a serious statement of certain aspects of a great problem which more and more is forcing itself on public consideration, and which deserves as well the attention of the medical profession.

## THE GROWTH OF AMERICAN UNIVERSITIES.

In the issue of *Science* for March 3 is a summary of the registration returns for Nov. 1, 1910, of twenty-seven of the leading universities in this country. Four of these — Harvard, Iowa, Indiana and Virginia — show a decrease in the total enrollment from last year, and four — Columbia, California, Minnesota and Wisconsin — show a gain of 500 or over. The largest gain was by Columbia, 1,279, or 796 if the summer attendance be omitted. Columbia now has a total registration of 7,411 students. A year ago the order of

the ten largest universities was Columbia, Harvard, Chicago, Michigan, Cornell, Pennsylvania, Illinois, Minnesota, Wisconsin and California; now it is Columbia, Chicago, Michigan, Harvard, Pennsylvania, Cornell, Minnesota, California, Wisconsin and Illinois, or, omitting the summer enrollment, Columbia, Minnesota, Michigan, Pennsylvania, Harvard, Cornell, Illinois, California, Wisconsin and New York. This rating, of course, includes all departments. If the undergraduate academic departments alone be considered, the order is Harvard, Michigan, California, Wisconsin, Minnesota, Chicago, Syracuse, Columbia, Yale and Princeton; or, including male academic students only, Harvard, Michigan, Yale, Princeton, Wisconsin, Chicago, Columbia, Cornell and Minnesota. The total enrollment of scientific students is considerably smaller than in the previous year.

In law and medicine there has been a decrease in the total number of students. The largest gains in law have been made by Stanford, Columbia and Harvard, the greatest losses by Virginia, Yale and Texas. In medicine, the greatest gains have been by Western Reserve, California and Johns Hopkins, the largest losses by Northwestern, Pennsylvania and Iowa. The present numerical order of the largest six law schools is Harvard, Michigan, New York, Minnesota, Columbia and Pennsylvania; that of the medical schools in Illinois, New York, Northwestern, Pennsylvania, Tulane, Johns Hopkins, Michigan, Columbia and Harvard.

The significance of these figures and ratings seems to be that in general the drift of education, like that of population, is towards the West, though a few of the large eastern colleges continue to hold their own or even to gain in academic enrollment. Among the professional schools the tendency is less sectional, but rather towards the development of prestige in individual schools regardless of location. For their future no one

"Can look into the seeds of time
And say which grain will grow and which will not."

## ANNUAL REPORT OF THE CARNEGIE FOUNDATION.

THE Carnegie Foundation for the Advancement of Teaching is fulfilling its promised purpose to become not merely an agency for the relief of individual teachers, but a central organ of criticism, of education throughout the country. The recently published fifth annual report of its president and of its treasurer contains, among other material, the comment of the former on "Medical Education in the United States and Canada," printed last fall as Bulletin Number 4 of the publications of the Foundation.

In this comment Mr. Pritchett points out that although the bulletin aroused objections, these were not directed against its statements of fact. Two kinds of medical school, the commercial school and the routine school, he declares, have become anachronisms in American education, and sooner or later, he believes, must cease to exist. The modern medical school must be one of ideals. "The medical practitioner of these opening years of the twentieth century should be an educated man, his conscience sensitive to the social importance of general physical well-being, his intelligence quick to follow the progress of medical education. Such mind and character grow up naturally amid the stimulating influence that universities and institutions of research produce."

In the issue of *Science* for March 3, there is a summary of the Carnegie Report, and also a critical review of it by Mr. Cattell, who points out that the addition this year of three more universities to the accepted list of the Foundation raises a question of policy in its attitude towards state-supported and sectarian institutions of learning, and also the question of the adequacy of its income to meet the new demands that will be made upon it. Mr. Cattell also disapproves the method of action of the Foundation in discontinuing its pensions for length of service, though he does not regret what he believes will be the ultimate necessity of giving up the retiring allowances for age and confining them to retirement for disability.

At the seventh annual conference of the Council of Education of the American Medical Association, which was in session last week at Chicago, there was also considerable adverse criticism of the bulletin of the Foundation on "Medical Education in the United States and Canada," to which we have above referred. Whatever may be said of the financial policy of the Foundation, however, Mr. Pritchett's defense of this bulletin seems adequate; and the standards of medical education and of personal quality which the Carnegie Foundation holds up for our profession seem worthy of individual and collective effort to approach and ultimately to attain.

## FOUR RECENT HOSPITAL REPORTS.

THE thirty-third annual report of the trustees of the Danvers (Mass.) State Hospital for the year ending Nov. 30, 1910, chronicles numerous

changes during that year in the medical staff, among them the resignation, on June 30, of Dr. Charles W. Page, who had been superintendent of the institution for nearly eighteen years, and who has been succeeded by Dr. Harry W. Mitchell, formerly superintendent of the Eastern Maine Insane Hospital. Dr. Mitchell's appended report shows that during the year ending Sept. 30, 627 new cases were admitted and 568 cases were dismissed, leaving a total of 1,483 patients in the hospital on Oct. 1, 1910, as against 1,424 a year previous. Of the 209 deaths that occurred among inmates during the year, nearly one half were due to general paralysis and organic dementia. During the year five nurses were graduated from the hospital training school.

The forty-sixth annual report of the trustees of the Boston City Hospital for the year ending Jan. 31, 1910, has only just been published, on account of the great accumulation of unfinished work at the city printing department. It includes the report of the superintendent upon the hospital and its various branches and departments, and also the medical and surgical statistics for the year, the house rules, and the rules for admission, discharge and government of patients. During the year 135,992 visits were made to the out-patient department by 39,482 patients; at the South Department, 3,123 patients were treated; at the Haymarket Square Relief Station, 35,771; at the East Boston Relief Station, 8,450, and at the Convalescent Home in Milton Lower Falls, 357. The total number of patients admitted during the year to the hospital wards was 8,950. The report is interestingly illustrated with a series of several plates and two large maps, and contains abundant and instructive statistics, showing the range and extent of service to the community done by the largest general hospital in New England.

The eighty-fifth annual report of the Massachusetts Charitable Eye and Ear Infirmary for the year 1910 includes the reports of the board of managers, of the treasurer, of the superintendent, of the board of surgeons, and of the pathological laboratory. During the year 3,432 patients were admitted to the infirmary wards, and 28,906 new cases applied for treatment in the out-patient department, and 35,203 old patients were treated. Nineteen nurses were graduated from the training school and 21 were received for the post-graduate course. The importance of open-air treatment for all hospital patients is now so generally recognized that the managers earnestly appeal to the public for subscriptions towards the sum of $10,000 to enable the construction of a roof garden for this purpose on the present hospital building.

The ninety-seventh annual report of the trustees of the Massachusetts General Hospital for the year 1910 includes the reports of the General Hospital in Boston and the McLean Hospital and the Convalescent Hospital in Waverley, Mass. The report of the trustees chronicles the establishment at the General Hospital during the year of a Children's Medical Department, a Dental Clinic and a Genito-Urinary Department. The report of the administrator calls attention to the need of a new Administration Building, of a new ward building, and of a country branch for convalescent surgical cases, and to the desirability of establishing a private hospital in close connection with the General Hospital. During the past year the number of patients admitted to the wards was 6,092; 22,302 new cases were received in the Out-Patient Department, to which a total of 124,584 visits was made. In the McLean Hospital at Waverley 166 new patients were admitted and 168 were discharged. The total number of patients admitted to the Convalescent Home was 638. Other reports and data, maps and illustrative plates complete a valuable and interesting volume.

These four annual reports, of four large and important medical charitable institutions, with their various branches in and near Boston, emphasise the extent and variety of the work done in the study and relief of human suffering, a work which makes our community one of the great centers of medical progress in this country.

## THE WORK OF THE FLOATING HOSPITAL.

In our issue of last week we published a series of papers under the general heading, "Studies in Intestinal Disturbances in Infants," without a sufficiently definite statement that these papers were all the result of work done on the Floating Hospital by its staff during the season of 1910. We are glad, therefore, to call attention to the fact that quite apart from its purely utilitarian uses as a means of supplying fresh air and healthful conditions for infants during the hot months of summer, the Floating Hospital has admirably served the broader purpose of providing a valuable means of investigation of the various affections to which infants are liable. The staff has shown a commendable enthusiasm in prosecuting these researches, and in carrying them to a conclusion as a collective piece of published work.

## MEDICAL NOTES.

A CENTENARIAN. — Mrs. Mary Wray, a negress, who died at Seattle, Wash., on March 3, is alleged to have been born in February, 1807, in Virginia. In her girlhood, as a slave, she is said to have worked on the construction of the first railroad built in Tennessee.

BUBONIC PLAGUE IN VARIOUS CITIES. — Report from St. Petersburg states that the epidemic of bubonic plague is still causing many deaths daily at Harbin, Kirin, Hulanchen and Bodune in Manchuria. A single case of the disease is reported to have occurred on March 4, at Odessa, a Russian port on the Black Sea. During the fortnight ending Feb. 25, there were six deaths from bubonic plague and five from smallpox in Amoy, a Chinese seaport on the Straits of Formosa, north of Hong Kong.

CHOLERA AT HONOLULU. — In last week's issue of the JOURNAL we noted the occurrence of two cases of Asiatic cholera at Honolulu. Report from that city on March 5 states that up to that time there had been 19 cases of the disease, with 15 deaths. All the patients were native Hawaiians. The quarantine established by the Territorial Board of Health has been extended, and the crews of visiting steamers will not be allowed to leave their ships while in port. A special committee has been appointed to investigate sanitary conditions in the city.

INCREASE OF POPULATION IN GERMANY. — Completed figures of the recent German census show that the total population of the empire is now 64,896,881, as against 60,641,278, a net increase of 4,255,603, or approximately 7% in the past five years. Since 1885 the annual rate of increase of population in Germany has not fallen below 1%. In 1900, it was 1.5%, and in 1905, 1.45%. These figures emphasize the fact that the Teutons remain to-day the most prolific as well as perhaps the most vigorous of modern civilized peoples.

AGE OF RETIREMENT FOR PHYSICIANS. — It is reported from Paris that in awarding damages to a French physician recently for injuries and consequent loss of practice sustained from being run into by an automobile, the court added the comment that at the plaintiff's age, sixty-five, a doctor should be glad of the opportunity to retire from practice. However this may be, such a method of retirement would seem less agreeable than a compulsory age limit.

AN EARLY WOMAN MEDICAL STUDENT. — An item in the London *Globe* states that one of the earliest women students of medicine was a Maltese lady who in the eighteenth century, under the patronage of the Knights of Malta, was enrolled in the Florence School of Medicine. During the period of her study she boarded and lodged with the nuns of a neighboring convent. She was allowed to witness and assist in the operations on female patients in the Majeur Hospital, received some private lessons at the convent from Professor Mannoni, but was not permitted to attend the lectures given to male students. It is not stated whether she was ever given a medical degree or whether she subsequently practiced her profession.

SOME RECENT GIFTS TO HOSPITALS. — The will of the late Mrs. Leander S. Cole, who died on Feb. 4 at Kingston, Mass., was filed in probate at Plymouth, Mass., on Feb. 28. Among numerous charitable bequests, it contains one of $100,000, without restriction, to the Jordan Hospital, Plymouth, which is also made the residuary legatee of the estate.

The will of the late Mrs. Benjamin D. Hicks, of Old Westbury, Long Island, who died on Feb. 17 in New York City, was filed in probate on March 1, and contains a bequest of $100,000 to the Nassau Hospital Association of Mineola, L. I.

Report from London states that Mrs. Whitelaw Reid, now resident in that city, has made an additional gift of $60,000 to the Red Cross Guild Hospital at San Mateo, Cal., to be used in the construction of new buildings. Mrs. Reid established this hospital a few years ago as a memorial to her parents.

### BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Feb. 28, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 35, scarlatina 41, typhoid fever 2, measles 16, smallpox 0, tuberculosis 42.

The death-rate of the reported deaths for the week ending Feb. 28, 1911, was 19.23.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, Feb. 25, 1911, was 280, against 279 the corresponding week of last year, showing an increase of 1 death, and making the death-rate for the week, 21.19. Of this number 151 were males and 129 were females; 275 were white and 5 colored; 150 were born in

the United States, 119 in foreign countries and 11 unknown; 51 were of American parentage, 196 of foreign parentage and 33 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 42 cases and 5 deaths; scarlatina, 33 cases and 3 deaths; typhoid fever, 3 cases and 1 death; measles, 70 cases and 0 deaths; tuberculosis, 57 cases and 18 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 51, whooping cough 4, heart disease 34, bronchitis 4. There were 30 deaths from violent causes. The number of children who died under one year was 41; the number under five years, 51. The number of persons who died over sixty years of age was 81. The deaths in public institutions were 118.

Fire at Melrose Hospital. — There was a slight fire last week in the laundry building of the Melrose (Mass.) Hospital, accidentally set by a child playing with matches. The damage amounted to about fifty dollars.

Meeting of Cambridge Nurses. — The seventh annual meeting of the Cambridge Visiting Nursing Association was held in Cambridge, Mass., on March 6. Addresses were made by Miss Clark, Miss Woodworth and by Dr. Eliot.

Fine for Violation of Pure Drug Laws. — In the United States District Court last week, a Boston firm of manufacturing chemists pleaded guilty to a charge of selling a certain "compound cordial" in violation of the pure food and drug laws, and was fined $25.

Appointment of Dr. Shay. — It was announced on Feb. 27 that Dr. Charles E. Shay, of Roxbury, had been appointed a school physician, to fill the vacancy caused by the recent resignation of Dr. Silas H. Ayer. Dr. Shay is an assistant physician at the Boston Consumptive Hospital.

A Living Centenarian. — Mrs. Jacob Morrell, of Newburyport, Mass., who is said to have been born at West Newbury, Mass., on March 1, 1809, celebrated last week the supposed one hundred and second anniversary of her birth. She has had ten children, of whom three sons and one daughter are still living. She also has twelve living grandchildren and nine great-grandchildren. Mrs. Morrell, who is in excellent health, has been a widow for many years.

Increase of Opium and Cocaine Habits. — At the thirty-third annual public meeting of the New England Watch and Ward Society, held in Boston on March 5, addresses were made by Dr. Charles W. Eliot and by Dr. William F. Boos, of Boston. Dr. Boos spoke of the increasing use of opium and cocaine by habitués in this community, of its relation to crime, and of measures that should be adopted to check its further spread. The annual report of the secretary showed that during the past year the society had secured in New England seventy-seven convictions for illegal sale or use of these drugs. Dr. Clarence J. Blake, of Boston, was elected vice-president of the society for the ensuing year.

Anti-Vivisection Exhibit and Lecture. — In the issue of the Journal for Feb. 23 we published a preliminary notice of an exhibit in Boston by the New England Anti-Vivisection Society, and of a lecture before that body by Dr. Herbert Snow of England. It is now definitely announced that this lecture will be given in Lorimer Hall, Tremont Temple, next Monday, March 13, at 8 P.M. "Admission is entirely free." The anti-vivisection exhibit is to be held in Gilbert Hall, Tremont Temple, from March 13 to 18, inclusive, and will be open from 10 A.M. to 10 P.M. "No one can afford to miss this exhibit," says the announcement, "it has accomplished wonders for the cause wherever held." Both the lecture and the exhibit should prove interesting and instructive, from various points of view, and we believe it desirable, as we stated in our previous note, that they "should be attended by physicians interested in the safeguarding of legitimate animal experimentation."

The Sharon Sanatorium. — The Sharon Sanatorium at Sharon, Mass., one of the pioneer institutions in the hospital treatment of tuberculosis in this country, and the first in New England, is entering the twentieth year of its existence. Its purpose is to offer the hope of recovery to women of very limited means afflicted with the disease in its incipient form. It is intended for the class who, while unable to afford the prices of the more expensive sanatoria, yet need the privacy and close supervision not easily obtainable in large public institutions. It is dependent largely upon public support, the price of board being quite inadequate to meet the current expenses.

In order appropriately to signalize the twentieth anniversary of the sanatorium, a public meeting will be held in Huntington Hall, Massachusetts Institute of Technology, Friday, March 17, at half-past four. At this meeting Hon. Curtis

Guild, Jr., will preside, and Dr. Livingston Farrand, of New York, executive secretary of the National Association for the Study and Prevention of Tuberculosis, will make the chief address on the subject, "The Present Outlook in the Campaign against Tuberculosis." Dr. Arthur T. Cabot, president of the Massachusetts Tuberculosis Commission; Dr. Herbert M. King, superintendent of the Loomis Sanatorium at Liberty, N. Y.; Prof. William T. Sedgwick, president of the directors of the Sharon Sanatorium, and Dr. Vincent Y. Bowditch, medical director of the Sharon Sanatorium, will also speak on the general subject. A cordial invitation is extended to all interested in the movement for the suppression of tuberculosis to attend the meeting.

### NEW YORK.

Mumps at Cornell. — Parotitis has been epidemic at Ithaca, N. Y., where there were reported to be 35 cases among students at Cornell University.

A Cold Storage Bill. — On Feb. 21, the Jersey Assembly passed a cold storage bill which prohibits the storing of foodstuffs for a longer period than six months without the consent of the State Board of Health.

Centenarians. — Mrs. Bella Goldberg, a native of Russia, died at her home in New York on March 1, at the reputed age of one hundred and seven years. Her husband, ninety-seven years old, is a peddler and still active. She leaves five children, twenty-seven grandchildren and six great-grandchildren.

Mrs. Jane Beam died in Paterson, N. J., on March 3, in her one hundred and third year. She was born at Ramapo, N. Y., in 1808, and had been a widow twenty-seven years.

German Hospital. — The annual meeting of the German Hospital and Dispensary was held on Feb. 20, when the report of the board of trustees showed that during the past year $67,771 had been received in donations and bequests, and that Mrs. Anna Woerishoffer had now given $100,000 towards the establishment of a children's department. Clinical instruction, it was announced, will be given hereafter in the wards of the hospital to Columbia University medical students. During the year, 45,703 patients were treated, of whom 6,490 were treated in the hospital proper, 32,845 in the dispensary department, and 3,724 by visiting district physicians. In the accident department 2,643 persons were treated.

Report of the City Health Department. — The condensed quarterly report of the City Health Department, for the quarter ending Dec. 31, 1910, shows that there was a decrease in the total number of deaths from the average of the preceding five years of 1,444, and in children under five years, 765. The largest decreases from the quinqennial average were in apoplexy and softening of the brain, 329; pulmonary tuberculosis, 282; bronchopneumonia, 174; and Bright's disease and acute nephritis, 167. The largest increases over this average were in organic heart diseases, 70; chronic bronchitis, 37; and appendicitis and typhlitis, 21.

Control of Venereal Diseases. — An important meeting of the American Society of Sanitary and Moral Prophylaxis was held at the New York Academy of Medicine, on Feb. 23, when the general subject of discussion was Health Department Control of Venereal Diseases, a matter which is now being favorably acted on by the Academy of Medicine, the New York County Medical Society and the City Health Department. The following papers were read: "Venereal Diseases should be Reported," by Dr. Frederic H. Gerrish, of Portland, Me., professor in Bowdoin College; "Why the Ophthalmologist Believes that Venereal Diseases should be Reportable," by Dr. Lucien Howe, of Buffalo; "From the Legal Standpoint," by William A. Purrington, formerly counsel to the Medical Society of the County of New York; and among those who took part in the discussion were Dr. H. M. Biggs, general medical officer of the Health Department, and Drs. William M. Polk, A. Jacobi and L. Duncan Bulkley.

New Building for Sloane Maternity Hospital. — The new building for the Surgical Department of the Sloane Maternity Hospital of Columbia University was opened for inspection on March 1. This, like the rest of the hospital, is the gift of Mr. and Mrs. William D. Sloane, and cost, with its equipment, more than $200,000. It is eight stories high, fireproof, and constructed of red brick and granite, in harmony with the hospital buildings. The operating amphitheater is entirely of marble and tiling. Prof. E. B. Craigin will be in charge, assisted by Dr. Frank Oastler. Dr. E. C. Lyon is the resident instructor in gynecology and Dr. Wilbur Ward, resident instructor in obstetrics.

Medical Conferences. — A series of medical conferences, arranged by the Educational Alliance

with the endorsement of the executive bodies of the New York County Medical Society and the Academy of Medicine, is being held during March and April in the auditorium of the Alliance, on East Broadway, presumably for the benefit of the large body of practitioners on the lower East Side. Some of the lecturers and subjects are as follows: Dr. J. O. Polak, on "Medical and Legal Aspects of Abortion"; Dr. J. Pedersen, "Sanitary and Moral Prophylaxis"; Dr. A. A. Berg, "Lodge and Contract Practice"; Dr. W. M. Polk, "Medical Ethics and their Application to Practice"; Dr. J. Bretauer, "The Secret Division of Fees"; Dr. S. S. Goldwater, "Abuses of Hospital and Dispensary Practice."

Anniversary of Bellevue Hospital Alumni. — The twenty-fifty anniversary of the Society of the Alumni of Bellevue Hospital was celebrated at Delmonico's on Feb. 28, when Dr. Floyd M. Crandall, president of the society, acted as toastmaster and addresses were made by Chief Justice of the Court of Special Sessions and Drs. Stephen Smith; Charles F. Stokes, Assistant Surgeon-General, U. S. N.; William M. Polk, Joseph D. Bryant and John W. Brannan. Dr. Smith, now eighty-eight years old, who left the active service of Bellevue in 1851, told of the early days of the institution, when it was little better than an almshouse and the York was the only other hospital of note in the city. Fourteen out of the nineteen original members of the society now living attended the gathering, and the oldest alumnus, Dr. Starling Loving, of Columbus, Ohio, was present. He and Dr. William Dibbons, who died recently, were the first paid internes (1849–50). They did excellent service in the cholera epidemic and were presented with a set of resolutions by the board of aldermen.

Mortality Statistics. — Some interesting figures for the year 1910 are given in the last *Monthly Bulletin* of the State Health Department. Diphtheria caused 2,421 deaths, which was 125 more than in 1909, but 35 less than in 1908, 350 less than the yearly average of the past twelve years of lowered mortality, and 3,000 less than the average of the twelve years prior to that. New York City reported 17,226 cases, with 1,715 deaths, and the rest of the state, 5,400 cases, with 716 deaths; being for the former a fatality of 1 death in 10, and for the latter, 1 in 7, probably from lack of a full report of cases. In the urban population there were 32 deaths per 100,000 from this disease, and in the rural, 10. In two counties, Schuyler and Hamilton, no diphtheria occurred, and in ten other counties less than 10 cases. Scarlet fever was more prevalent than in 1909, the deaths numbering 1,616, as against 1,200; but New York City shared in the increased mortality to a less extent than the rest of the state. There were 432 fewer deaths from measles than from scarlet fever, but in eleven years of the last twenty-five the deaths from measles have exceeded those from scarlet fever, their average mortality having been annually 1,100 to 1,350. Taking into account its remote effects, measles would seem to be fully as large a contributer to mortality as scarlet fever. The reported cases numbered about 70,000, more than one half of which were in New York City. Pneumonia caused 9,843 deaths, 450 more than in 1909 and 1,200 more than in 1908, but fewer than in the years preceding. Bronchopneumonia, with 7,240 deaths, and acute bronchitis, with 1,600 deaths, were chiefly fatal in March, and during the annually recurring epidemic of influenza, which disease was given as the direct cause of 1,439 deaths. March, on this account, was the month of highest mortality, the number of deaths exceeding those in July by 400. The average midwinter mortality was 418 deaths daily, while the midsummer was but 400.

Dr. Herbert Snow and Anti-Vivisection. — Dr. Herbert Snow, the English anti-vivisectionist, has been giving two lectures before the New York Anti-Vivisection Society. His special message here, as elsewhere, has been the uselessness of the modern era of the experimental study of cancer, yet Prof. James Ewing, of the Cornell Medical College, in a published letter, points out that in his testimony before the Royal Commission on Vivisection he not only acknowledged, but displayed, gross ignorance of the objects, methods and results of this study. Although positively asserting his heterodox opinion that Jensen's mouse tumor, which is now being propagated by scientific students of cancer in every civilized country, has nothing in common with the cancer of human beings, he admitted that he had never seen a mouse tumor and knew nothing about the diagnosis of cancer in lower animals. Though Dr. Ewing shows up his inconsistencies and errors with convincing force and in considerable detail, he is disposed to regard Dr. Snow, whom he speaks of as in many respects a quaint and interesting character, with a feeling of pity. His advancing years, which he pleaded in 1906, may excuse him,

he says, for not looking more carefully into the quality of the auspices under which he visits America, and he may not know that the New York Anti-Vivisection Society, whose hospitality he accepts, stands convicted in this country of gross and persistent misrepresentation of the truth. Dr. Snow having published a violent and contemptuous diatribe in reply to Professor Ewing's criticisms, the latter has, with his characteristic directness, completely refuted his misstatements and concludes his answer with these words: "As for attacking a medical confrère, I think the medical profession will support me in asserting that Dr. Snow's statements about the worthlessness of animal experimentation have effectually removed him from the protection of professional courtesy, as well as from the further consideration of all sensible persons."

Congestion of Population. — The Commission on Congestion of Population appointed by Mayor Gaynor last May made its report on Feb. 28. This is very voluminous, covering several hundred pages and including one hundred tables showing various comparisons, from which deductions are drawn. It is divided into five parts, dealing with conditions of room crowding, the effects of such conditions of living on morals, health and mortality, the causes of the overcrowding, the methods adopted by European cities to prevent similar conditions, and recommendations for means of relief. Almost all the recommendations are accompanied by drafts of ordinances designed to carry them into effect The Commission points out that the present tenement-house law is defective, since under it congestion south of Fourteenth Street, Manhattan, is actually increasing. This law, allowing six-story tenements, as it does, permits a population of at least 1,300 to the acre. The increase in population density in the different boroughs from 1905 to 1910 is given, the average increase for the city being 3.5 per acre. Very serious room overcrowding was found in Brooklyn and the Bronx as well as in Manhattan. The various causes of congestion are gone into extensively, after which measures for their abolition or amelioration are taken up. A few of these are the following: No building erected hereafter in Manhattan below 181st Street should exceed the cubage or volume of 174 times the area of the lot. Elsewhere in the city no building should exceed 120 times such cubage. Every factory and loft building hereafter erected should have in the rear an open lot, extending across its entire width and in depth equal to at least one tenth its height. No tenement should exceed in height the width of the widest street on which it stands, and elsewhere than in Manhattan, except under special circumstances, tenements of more than four stories should be prohibited. In outlying districts three stories should be the limit. No room in a tenement hereafter to be erected should be less than 9 by 10 feet, and every apartment in a new tenement should have at least one room with a minimum superficial area of 150 square feet. At least 600 cubic feet of air space should be allowed for every adult, and 300 for every child under twelve years. The Commission urges that immediate steps be taken to provide more playgrounds for the city, and also that during certain hours each day some streets in congested districts should be closed so that they may be used as playgrounds.

## Current Literature.

### Medical Record.

Feb. 25, 1911.

1. Chetwood, C. H. *Preliminary Report of Cases Treated by the Ehrlich-Hata "606" Injection.*
2. Hald, P. T. *A Simple Method for the Relief of Certain Forms of Odynphagia.*
3. Betts, J. B. *A Case of Aneurysm of the Heart.*
4. Palmer, F. A. *Stock Vaccines in Acute Gonorrhea.*
5. Verbrycke, J. R., Jr. *Gastric Ulcer, Hemorrhage, Operation, General Peritonitis, Vaccine Therapy.*
6. Royster, H. A. *Melted Iodoform Ointment in the Treatment of Suppurating Bubo and Ischiorectal Abscess.*
7. *White, G. D. *Is Cancer Contagious? A Report of Five Cases with Four Deaths.*
8. Griffin, E. A. *A Case of Multiple Pregnancy with Eclampsia.*

7. White reports five consecutive cases of cancer in one family. Three lived in one house, two in another. All were related to each other by blood or marriage or both. The first case occurred in 1905, the last in 1910; the first four have died, the last one cannot live more than six months. This suggestive series recalls to the writer's mind the instance reported by Dr. Gaylord, of Buffalo, of several healthy rats developing malignant disease in a cage previously occupied by infected rats. [L. D. C.]

### New York Medical Journal.

Feb. 18, 1911.

1. Noble, C. P. *The Nature of Neurasthenia and of Acute Insanity.*
2. Butler, G. F. *Twilight Talks with the Doctor.*
3. Knott, J. *Phrenology and Its Founder: The Claims of Franz Joseph Gall on the Homage of Scientific Posterity.*
4. Roth, H. *Subphrenic Abscess.*
5. *Funke, J. *The Putrefactive Products of the Intestinal Canal as the Etiological Factors in Certain Forms of Neuralgia.*

6. Clothier, J. *Post-Diphtheritic Paralysis of the Accommodation.*
7. Hart, A. J. *A Simple Technic for Preparing Salvarsan in Oily Suspension.*
8. McDowell, W. *The Origin of Cancer and Its Control.*

5. Funke points out that in most cases of neuralgia there is a lesion responsible for the pain. This lesion may be near the seat of pain or at a distance from it. A limited number of cases of neuralgia are due to products of protein putrefaction in the intestine. The writer reports eight cases of obstinate neuralgia — sciatic, supra-orbital, trifacial — successfully treated by energetic purgation, sometimes supplemented by sour milk. He watched carefully the excretion of indican in these patients and found that diminished indicanuria generally coincided with mitigation of pain. [L. D. C.]

### Feb. 25, 1911.

1. Leszynsky, W. M. *Report of a Case of Meningomyelitis with Complete Recovery.*
2. Wright, J. *A Contribution to the Study of Fats and Lipoids in Animal Tissue.*
3. Trimble, W. B. *Remarks on Neurofibromatosis.*
4 *Craig, C. F. *On the Nature of the Virus of Yellow Fever, Dengue and Pappataci Fever.*
5. Nammack, C. E. *The Relation of the Doctor to the Church.*
6. Pedersen, J. *Two Cases of Renovesical Tuberculosis Treated with the Bacillus Emulsion.*
7. Rosenbeck, C., and Rohdenburg, G. L. *Chyluria Containing the Cercomonas Hominis.*
8. Knott, J. *Phrenology and Its Founder: The Claims of Franz Joseph Gall on the Homage of Scientific Posterity.*

4. Dr. Craig, of the Army Medical Corps, publishes the results of his studies on the etiology of dengue and compares them with the experiments of others on yellow fever and pappataci fever. He points out the similarity between these three fevers, which suggests a close relationship between the causative organisms. All three of these diseases have a sudden onset, run a comparatively rapid course and terminate by crisis. In all three the cause is present in the blood, but only during certain periods. All three can be produced by the injection of the blood (filtered or unfiltered) of a patient. All three are transmitted by an insect — yellow fever and dengue by a mosquito, pappataci fever by a biting fly. In all three the causative agent is ultramicroscopic. There is conclusive evidence that none of the three is contagious. [L. D. C.]

### The Journal of the American Medical Association.

### Feb. 25, 1911.

1. Simpson, F. F. *Retroperitoneal Shortening of the Round Ligaments.*
2. Plummer, H. S. *Technic of Examination of Esophageal Lesions.*
3. Roeder, C. A. *Technic for Removal of the Appendix and Fixation of the Cecum.*
4. *Corbus, B. C. *Observation on Twenty-Eight Patients Treated with the Ehrlich-Hata Remedy (Salvarsan).*
5. Goldspohn, A. *Intraperitoneal Shortening of the Round Ligaments for Retroversion of the Uterus through the Temporarily Dilated Inguinal Canals and Internal Rings with Closure of the Wounds by a Careful Hernia Technic.*
6. Gay, F. P. *Immunology: A Medical Science Developed through Animal Experimentation.*
7. Cole, H. P. *Transfusion in Pellagra: A Review of Twenty Cases.*
8. *Flexner, S., and Clark, P. F. *Experimental Poliomyelitis in Monkeys. Ninth Note. Immunity Principles. Effects of Hexamethylenamin: Early Diagnosis. Virus Carriers.*
9. Lambert, R. A., and Hanes, F. M. *Cultivation in Vitro of Rat Sarcoma.*
10. Hertzfeld, A. *Arsenic in Syphilis.*
11. Pritchett, H. S. *Weak Medical Schools as Nurseries of Medical Genius.*

4. Corbus believes that the intravenous method of giving salvarsan, on account of the rapid elimination of the arsenic, is greatly inferior to the intramuscular alkaline solution method of Alt and Lesser. Each case should, however, be treated individually with special reference to duration of infection, severity of infection and condition and age of the patient. In all early infections, i. e., those before the Wassermann reaction is present, the intravenous method is especially indicated. The value of this method decreases in direct proportion to the length of time of the infection, as in the later stages the spirochetes are not so free in the blood stream, but are held in the lesions and hence not so easily reached by the intravenous method. But when a quick action is desired, as in malignant lues, it is the only method to employ. A simple injection, speaking generally, has, in favorable cases, approximately the same result as four or five months' treatment with mercury and iodine. It may show brilliant effects in cases in which mercury and iodine have failed. Salvarsan has advanced the treatment of syphilis in a decided manner, but on account of its strong arsenic content, repeated doses may have a disastrous effect on the human organism.

8. Flexner and Clark have found that the antibodies or neutralising immunity principles can be demonstrated in the blood of patients suspected of having had a so-called abortive attack of poliomyelitis, thus proving that abortive attacks do occur. They also find that the antibodies disappear earlier from the cerebrospinal fluid than from the blood stream, where they may persist for many years. It is probable, then, that to the circulating antibodies, rather than to those locally present in the cerebrospinal fluid, are due the limitation and repair of damage inflicted on the nervous system by the infection, and the enduring protection of the body from reinfection. Hexamethylenamine appears to be successful in inhibiting infection but not in restraining an already established one. It is certain that an early diagnosis can be made by finding in the cerebrospinal fluid excess of protein, a slight turbidity and increase in white corpuscles, with absence of bacteria. The authors give great credit to the work of Osgood and Lucas in establishing the fact that the virus can live for so long a time in the nasopharyngeal mucosa after recovery from the acute stage. [E. H. R.]

### The Lancet.

### Feb. 4, 1911.

1. Edridge Green, F. W. *Hunterian Lectures on Color Vision and Color Blindness.*
2. Keith, A. *An Address on the Position of Sir Charles Bell amongst Anatomists.*
3. *Colyer, J. F. *The Treatment of Extensive Caries in Children by Extraction.*
4. Balfour, A. *X Bodies in Human Blood.*
5. *Barker, A. E. *Some Cases Illustrating the Effects of the Hyperemia Treatment by Elastic Bandages on Ununited Fractures.*
6. *Sibley, W. K. *The Treatment of Skin Diseases by Hyperemia (Bier's System).*
7. Choksy, K. B. N. H. *On the External Application of Magnesium Sulphate in Erysipelas.*

3. Colyer is an advocate of treating extensive caries of the teeth in children by extraction. The two chief criticisms against this method, that the loss of power to masticate interferes with nutrition and, second, that the permanent teeth will be made irregular, he endeavors to refute by a few illustrative cases.

5. Barker believes that certain cases of ununited fracture are greatly benefited by the hyperemia treatment carried on by means of elastic bandages. He cites four illustrative cases.

6. Sibley is of the opinion that practically all chronic forms of skin disease are benefited by the hyperemia treatment before applying local remedies. His most satisfactory results have been obtained in certain long-standing cases of psoriasis. [J. B. H.]

### British Medical Journal.

### Feb. 4, 1911.

1. Osler, W. *Remarks on Organization in the Profession.*
2. Lockwood, C. B. *Clinical Lectures on Anatomy and Morbid Anatomy in Clinical Surgery.*

3. His, W. *An Address on the Treatment of Gout and Rheumatism by Radium.*
4. *Geddes, A. C. *A Further Note upon the Mechanical Effects of a Right-Sided Pleural Effusion.*
5. Bunch, J. L. *The Treatment of Three Hundred Naevi by Freezing.*
6. Canney, J. R. C. *Carcinoma of the Stomach in a Youth of Nineteen.*
7. Boyce, R. *The History of Yellow Fever in West Africa.*
8. Fink, G. H. *High Temperature after Labor and Its Treatment with Aspirin.*

4. Geddes has continued his studies of the mechanical effects of a massive right-sided pleural effusion. These effects he describes in detail. Noteworthy among them are the distortions and compressions of the great veins as they approach the heart. To this he ascribes the sudden deaths which may not infrequently occur in this condition. [J. B. H.]

Quarterly Journal of Medicine. Vol. 4. No. 14.

January, 1911.

1. *Windsor, J. F. *The Bacteriology of Human Bile with Especial Reference to the Typhoid Carrier Problem.*
2. *Frew, R. S. *On Carcinoma Originating in the Suprarenal Medulla in Children.*
3. *Lewis, T. *Notes upon Alternation of the Heart.*
4. Lewis, T., and Oppenheimer, B. S. *The Influence of Certain Factors upon Asphyxeal Heart Block.*
5. Wallis, R. L. M., and Schölberg, H. A. *On Chylous and Pseudochylous Ascites. Part II.*
6. *Rischbieth, H. *On Pneumococcal Peritonitis. A Paper Based upon a Series of Fifty-Seven Cases in Children and One in an Adult.*
7. *Batly, H. W. *A Résumé of Some of the Evidence Concerning the Diagnostic and Clinical Value of the Wassermann Reaction.*
8. Scott, S. *Critical Review. Vertigo.*

1. The bile was sterile in less than one quarter of 89 cases examined post-mortem by Windsor. The subjects were hospital patients dying of various conditions. The organism found was usually the colon bacillus, either alone or with other bacteria. Little importance can be attached to such work, owing to the probability of post-mortem or agonal invasion from the intestine. One case, however, deserves special mention. It was that of a boy nine years old, who was not known to have had typhoid fever, and who died of tuberculous meningitis. At autopsy the Bacillus paratyphosus A was recovered from the bile in pure culture. The child was, therefore, a paratyphoid-bacillus carrier. In fourteen cases the bile was examined at the time of operation for cholecystitis. In one of these, with empyema of the gall bladder following attacks of biliary colic, the paratyphoid bacillus A was isolated. In two cases of gallstones without history of typhoid fever, the bacillus typhosus was cultivated from the bile.

2. Frew has made some interesting observations on the mode of spreading of malignant disease of the suprarenal medulla in children. He finds that the metastases differ in distribution, depending upon which adrenal is affected. Where the *left* adrenal is primarily involved, there are metastases in the aortic lymph nodes, extending up into those of the posterior mediastinum and neck, and there is usually involvement of the cranial bones. In the case of the *right* adrenal gland, there are metastases in the liver, in the lymph nodes on the upper surface of the liver, on the upper surface of the diaphragm, in the pulmonary lymph nodes, in the lungs and often in the cranial bones. Exophthalmos almost always appears first on the side on which the adrenal is diseased. He considers that these features point to metastasis by way of the lymphatics. He believes that the growths are to be classified as carcinomata. J. H. Wright, however, has recently shown [1] that some, at least, of these growths belong to the neuroblastomata.

3. By the study of alternation of the ventricle produced by ligation of the coronary arteries, Lewis confirmed the observation of Hering that the *larger* ventricular beat might correspond into the *smaller* arterial beat. Moreover, he found an explanation for this apparent paradox in the presence of simultaneous alternation of the *auricles*, the weak ventricular beat being preceded by a strong auricular contraction, so that the ventricle was well filled, and could, therefore, by a weak contraction, expel a considerable amount of blood, and, therefore, give rise to a strong arterial pulse. Lewis further demonstrated that clinical and experimental alternations are identical conditions, for he found the same changes in the electrocardiogram in both.

6. Pneumococcal peritonitis, though very rare in the adult, is met with fairly often in children. Rieschbieth's analysis of fifty-seven cases shows conclusively that the involvement of the peritoneum is always secondary by way of the blood stream, the lungs being always also implicated; infection from the intestinal tract or the genitalia can be excluded. Clinically, the condition sets in acutely, with high fever, pain, vomiting and later diarrhea. The last-named symptom is more or less characteristic of this type of peritonitis and is regarded as of toxic origin. The inflammation is always general at first, but may become localized by adhesions, with the formation of abscesses. The diagnosis may be made from the association with pneumonia, or from blood cultures. The statement that an increased fibrin network in the blood is diagnostic is incorrect, for the reviewer has found the fibrin increased in some cases of ordinary appendicitis. The prognosis is very grave, the mortality being 100% where the peritonitis remained general, and 33% in the cases where localization with abscess formation occurred. Incision and drainage offers the best prospect of cure.

7. See editorial in Boston Medical and Surgical Journal, Jan. 26, 1911, p. 126. [W. T.]

[1] Jour. Exp. Med., vol. xii. no. 4, 1910.

Deutsche Medizinische Wochenschrift. No. 5.

Feb. 2, 1911.

1. Paschkis, H. *The Treatment of Benign Skin Tumors.*
2. Harnack, E. *The Fifth Edition of the German Pharmacopea.*
3. *v. Marschalko, T. *The Unsatisfactory End Results of the Neutral Suspension of Salvarsan in Syphilis.*
4. v. Notthafft. *The Question of the Danger of Intravenous Injection of Acid Solutions of Salvarsan.*
5. Loeb, H. *Needle for Intravenous Injection of Salvarsan.*
6. Traube, J. *The Diagnosis of Syphilis.*
7. Senator, M. *The Treatment of Lupus of the Mucous Membranes.*
8. Wolfsohn, G. *Thyreotoxic Symptoms after Iodine Medication.*
9. Ehrlich, B. *Mitigation of Pain in Normal Labor.*
10. Strösener, E. *Cholera Vibrios in the Water of the Danube.*
11. Walbum, L. E. *The Effect of $H_2O_2$ on the Enzyme-Producing Power of the Mucous Membrane and on the Excreted Enzymes.*
12. Barberio, M. *New Observations on My Spora Reaction.*
13. Saugaker, Th. *Five Fatal Cases of Diabetes Mellitus in Brothers and Sisters Aged Five to Eleven Years.*
14. Schlenk, F. *A New Electric Thermophor.*

3. This author has been working with salvarsan in the neutral suspension for over a year in his skin clinic and now reports on the later results in some of his cases. He does not deny in the slightest the valuable effects of this drug immediately after its use, but has been rather disappointed by its end results, as recurrences are frequent and the drug at a second time not so effective. This is probably due to the power of this class of parasites to become resistent to arsenic. He favors using mercury after the salvarsan and advises starting in at once. [C. F., Jr.]

Münchener Medizinische Wochenschrift. No. 4.

Jan. 24, 1911.

1. Seitz, L. *Hemorrhages in the Early Months of Pregnancy and Their Relations to Abortion.*
2. Führer, H. *Pharmacologic Investigations of Mixed Narcosis.*

3. Hegler, C. *Studies of Metabolism in Karell's Milk Cure.*
4. *v. den Velden, R. *The Analeptic and Hemostatic Effect of Adrenal Extract.*
5. Meyer, H. *A Method of Measuring X-Rays for Treatment. I.*
6. Spiethoff, B. *Salvarsan in Syphilis. II.*
7. Walcher, G. A. *Method and Indications for Cervical Casarean Section.*
8. *Wackers. *A Simplification and Improvement of Van Deen's Blood Test.*
9. Fleischmann, P. *The Question of Regional Differences in Susceptibility to Iodine.*
10. Widmer, C. *The Ray Treatment of Extensive Epithelial Defects.*
11. Goetsch, W. *Poultices in the Form of Clothing.*
12. v. Borosini, A. *Warm Compresses for the Production of Hyperemia.*

4. The writer finds that adrenalin causes a marked fall in the coagulation time of the blood all over the body. This effect lasts about two hours. It was observed after the administration of adrenalin by mouth, subcutaneously or by absorption from mucous membrane.

8. Wackers discovered that he could obtain a good guaiac test for blood in the urine by filtering it and then pouring the reagents into the filter paper. The reaction appears within a few seconds. The test is considerably more delicate than when an ether extract is made in the usual way. [G. C. S.]

Berliner Klinische Wochenschrift. No. 6.

Feb. 6, 1911.

1. Pel, P. K. *A Case of Tobacco Psychosis in a Boy of Thirteen Years.*
2. Hertz, R., and Thomsen, O. *An Examination of Scrofulous Children by Means of the Methods of Examination of Von Pirquet and Wassermann.*
3. Saiz, G. *Tetany with Epileptiform Attacks and Psychoses.*
4. Reiter, H. *Vaccine Diagnosis.*
5. *Böhm, M. *Rachitis as a Causative Factor in Curvatures of the Spine.*
6. Levinsohn, G. *The Reclination of Gray Cataracts.*
7. Frugoni, C., and Gargiano, C. *A Singular Complication during the Pasteur Protective Inoculation against Rabies.*
8. Moller, S. *"Hydropyrin Grifa": A New Soluble Salt of Acetylsalicylic Acid.*
9. Sticker, G. *Changes in Typhoid Epidemiology.*

5. The author discusses fully the rôle played by rachitis in the different forms of curvature of the spine. The article is illustrated with photographs from life, x-ray plates and pathologic specimens. [J. L. H.]

Die Therapie der Gegenwart.

November, 1910.

1. Von Leyden, E. *Some Remarks on Digitalis.*
2. Syllaba, L. *The Prognosis of Basedow's Disease.*
3. Sternberg, W. *New Ideas for the Cure of Obesity by Means of a Diet Kitchen.*
4. Karewski, F. *Principles of the Treatment of Hernia.*

December, 1910.

1. Gudzent, F. *The Present Status of Radium Emanation Therapy.*
2. *Alexander, A. *The Treatment of Intestinal Indigestion with Taka-Diastase.*
3. Kümmell, H. *The Operative and Specific Treatment of Kidney and Bladder Tuberculosis.*
4. Jacobsohn, L. *Lectures on the Fundamental Principles of Modern Psychology and Psychiatry, Prepared by the Prussian Central Committee for Medical Progress.*

2. Alexander concludes from a careful study of the pharmacological action of taka-diastase that this preparation should be given a trial in the large number of cases of diarrhea which can be traced to intestinal fermentation. In diarrhea of gastric origin it should be used in conjunction with hydrochloric acid. Diet is important in the treatment. Carbohydrates should be much restricted at first; rolls, bread and heavy vegetables may then be added cautiously until the patient is back on normal fare. As recovery approaches, the dose of taka-diastase is reduced, but the preparation should not be dispensed with altogether until no starch is demonstrable in the stools. [L. D. C.]

Deutsche Zeitschrift für Chirurgie. Bd. 108.

Hept. 3–4. January, 1911.

1. *Brandes, M. *The Treatment of Fistulæ with Beck's Bismuth Paste.*
2. *Solieri, S. *Remarks on Lung Surgery.*
3. Lofaro, P. *A New Gastrostomy Procedure.*
4. Goebell. *Diagnosis and Treatment of Acute Vertebral Osteomyelitis and Purulent Spinal Meningitis.*
5. Sudeck. *Myositis Ossificans or Periosteal Callus?*
6. *Heinemann. *Contribution to the Treatment of Fractures by a Method of Nail Extension.*

1. Brandes reviews the work which Beck and a number of his own German colleagues have done in the use of bismuth paste, and endeavors to point out the reasons why some of them have had poor success.

He divides the reasons for using the paste into two large classes, diagnostic and therapeutic.

For the use of the paste for diagnostic purposes, augmented by the x-ray, he has nothing but praise, and in support of his argument cites cases where doubtful diagnoses have been greatly aided. The use of the paste for therapeutic purposes he subdivides as follows:

I. *a. Empyema fistulæ.* Brandes had five of these cases, four of which improved rapidly following the use of the paste; the other had a bronchial fistula. Brandes states that he thinks the use of the paste in the majority of these cases is preferable to a large thoracoplasty.

*b.* Fistulæ from various causes, excepting bone and joint tuberculosis such as actinomycosis of the cecum, tuberculosis of the testicle, fistulæ following amputation of the foot for diabetic gangrene, perinephric abscess, etc., seven cases in all. The majority of these had had other forms of treatment. All healed well following the paste injections.

*c.* Fistulæ from septic bones and joints — eight cases. Four of them having had radical drainage operations done, Brandes considered that the convalescence was much shortened and that the paste was a valuable adjunct to surgical treatment.

II. *Poor results in infected bone cases.* — Three of these were tubercular disease of the spine and all had advanced tuberculosis of the lungs.

Brandes noticed that there was invariably a slight rise in temperature and some diarrhea following the injection of the paste. In two of his cases there was marked intoxication owing to the retention of a pool of pus behind the injected mass, a possibility which he endeavored to eliminate by his technic of injecting. He avoided any bismuth stomatitis by ordinary care of the mouth and teeth. For the injections he uses either a catheter or a syringe with a long glass nozzle, so that he may get as far as possible to the bottom of the fistula, and then while he is injecting, he slowly withdraws the tube. The cavity to be injected is always washed as free as possible of secretions before the paste is put in.

He considers that the paste is indicated in fistulæ following empyema operations, in various resections where a large cavity is left, such as nephrectomy, the removal of sequestra, etc. For bone and joint tuberculosis, however, he does not believe it should be used until the patient is in good condition following careful hygienic treatment.

He does not agree entirely with Beck that the paste has nothing but a bactericidal action, but believes that it stimulates a ferment of the leucocytes to digest the secretions of the fistula. He offers no proof of this.

His conclusions are as follows:

(1) Beck's method of injecting bismuth paste is a marked aid in the diagnosis of fistulæ by the x-ray.

(2) By careful injections of the paste, the time of healing for even diffuse fistulæ is very much shortened.

(3) Poor results are to be expected where there is a general poor condition of the patient. Large amounts of secretion and rapid progress of the primary cause of the

disease are the usual factors in causing poor results. As stated before, bone and joint tuberculosis have the greatest percentage of failures.

(4) The method has the danger of bismuth and nitrate poisoning. By altering the technic and using bismuth carbonate for bismuth subnitrate, and by the diminution of the volume of bismuth, the danger of poisoning is practically done away with.

(5) A non-poisonous substitute of the bismuth compound which can give as good results must be discovered before the injection of a paste can cause not only the quickest and most favorable results, but also the safest in the treatment of sinuses and fistulæ.

2. Solieri devotes a great deal of space to a textbook review of the various surgical lung complications, mentioning the names of the men who have recently written on the different subjects.

He concludes with a very careful report of six cases of his own which were as follows:

Two foreign body abscesses of the lungs.

Two echinococcus cysts of lungs, one following a suppurating echinococcus cyst of the liver.

An abscess of the lung following bronchopneumonia.

A case of gangrene of the lower lobe of the right lung.

The various operations performed and the after-treatment are given in great detail.

6. Heinemann describes in detail a method of obtaining and maintaining extension of fractures of various kinds by the use of nails. A metal disk is placed at both ends of the nail to aid in the maintaining of the extension. A number of cases are reported. The article is well illustrated and the conclusions which the author draws are as follows:

(1) Extension by the use of nails is a useful modification in the extension treatment of fractures.

(2) The use of this method aids wonderfully in obtaining union.

(3) Indications for its use are:

*a*. Old ununited fractures with great deformity.

*b*. Compound fractures with extensive lacerations of the soft parts.

*c*. Recent fractures with great displacement.

*d*. Corrective bone operations where there is extensive retraction of the soft parts. [J. B. S., JR.]

## Obituaries.

### ALOYSIUS O. J. KELLY, M.D.

DR. A. O. J. KELLY died from the effects of diabetes in Philadelphia, Feb. 23, at the age of forty. Born in Philadelphia in 1870, he was graduated from La Salle College in 1888, receiving a Master's degree from the same institution in 1891, the same year that he attained his doctor's degree at the University of Pennsylvania. After graduation his appointments and work may be summarized as follows: Resident physician, St. Agnes Hospital, 1891–92; post-graduate student abroad, 1892–94; assistant in medical dispensary in the University Hospital in 1894, and thereafter successively instructor in physical diagnosis, instructor in clinical medicine, associate in medicine, assistant physician to the University of Pennsylvania Hospital and assistant professor of medicine. From 1900 he had also been professor of the theory and practice of medicine in the University of Vermont. Other appointments were professor of pathology, Women's Medical College, 1906; pathologist to German Hospital, 1897; physician to St. Agnes Hospital, 1897; physician to St. Mary's Hospital, 1895–1902; director of laboratories in Philadelphia Polyclinic, 1895–97. He was also for four years editor of the *International Clinics*, and for three years, since 1907, had been editor of the *American Journal of Medical Sciences*. He was a member of the Association of American Physicians and of many other learned societies, and was a frequent and illuminating contributor to medical progress, not only through his editorial activities, but also as an original investigator. He had completed at the time of his death a textbook on Practice and was engaged, in collaboration with Prof. John H. Musser, in the editing of a work on Treatment, in three volumes. He was also the author of the article on Diseases of the Liver in Osler's "Modern Medicine."

In his death the profession loses one of its most active and promising men at a period of life when much might have been expected from him in the immediate future. We quote a part of the minute adopted at a meeting of the Faculty of the University of Pennsylvania Medical School regarding his life and work:

"Serene amidst all difficulties, judicious under every circumstance, generous and winsome, able and brilliant, gifted with clearness of diction and aptness of explanation as an instructor, indefatigable and interested in the practice and study of his profession, A. O. J. Kelly won his way in this and other institutions and in the American medical profession by sheer worth, which he manifested in always increasing degree until his death. His memory as a teacher is treasured by his students, his ability as a scientist is sustained by his recorded work; his eminence as a practitioner is witnessed by the cordial respect with which his confrères universally regarded him, and his integrity as a man and his gentle, generous character as a friend ineffaceably registered in the sorrow with which this minute is made by his colleagues."

### WALTER REMSEN BRINCKERHOFF, M.D.

DR. WALTER REMSEN BRINCKERHOFF, who died in Boston of pneumonia on March 2, was born on July 4, 1874, at Matteawan, N. Y. He received the degree of S.B. from Harvard in 1897, and that of M.D. in 1901. He served as interne and as assistant in pathology at the Boston City Hospital, and in 1902 was appointed assistant in pathology at the Harvard Medical School. In 1904 he held a fellowship in the Rockefeller Institute for Medical Research, and in 1905 was physician to the Carnegie archeological expedition to Transcaspia. In 1906 he became first director of the leprosy investigation station of the United States Public Health and Marine-Hospital Service at Hawaii, and for four years conducted at Honolulu, and in the leper colony on the island of Molokai, pathologic and clinical research which made him known as an authority on that disease. In the fall of 1910, he resigned his position at Hawaii and returned to Boston to accept an appointment as assistant professor of pathology at the Harvard Medical School, where he began with characteristic enthusiasm new work of administration, teaching and investigation. He died, like a good physician,

at his post, having attended to his duties on Feb. 28 until taken sick in his laboratory. He was a man of executive ability, a good teacher, a thorough investigator, a scientist of achievement and distinguished promise, a courteous and lovable gentleman. Personal sorrow and misfortunes had only added sweetness and strength to his character. His death is a genuine loss to his school, to the profession, and to the cause of scientific medicine. He is survived by his mother, by two brothers, and by an infant son.

### JAKOB HEINRICH VAN'T HOFF, M.D., LL.D.

Prof. Jakob Heinrich van't Hoff, who died last week in Berlin, was born at Rotterdam in 1852. He first studied technical engineering at the Polytechnic Institute at Delft, from which he graduated in 1871; and subsequently went to the University of Utrecht, from which in 1874 he received the degree of Ph.Nat.D. For many years he was professor of chemistry, mineralogy and geology at Amsterdam University, where his researches and publications in the field of physical chemistry, particularly his contributions to the theory of atomic structure, established his reputation as one of the world's foremost authorities in his special subject. In 1901 he was awarded the Nobel Prize for scientific investigation, and became professor of physical chemistry at the University of Berlin. During the same year he received the honorary degree of M.D. from the University of Greifswald, and the honorary degree of LL.D. from the University of Chicago and from Harvard College. In conferring the Harvard degree, President Eliot described him as "a Hollander translated to Berlin, the greatest living physical chemist." He was a member of many foreign learned and scientific societies.

## Miscellany.

### MASSACHUSETTS MEDICAL SOCIETY.

Annual Meeting, 1911. Preliminary Announcement of the Committee of Arrangements.

The annual meeting this year comes on June 14 and 15 and certain radical changes over the meetings as previously held are contemplated.

It would seem that the meetings of the sections on Tuesday afternoon, only two hours each, are short considering the importance of Massachusetts as a medical center. This year, therefore, there will be two meetings of each section on Tuesday, — a morning session at 10 and an afternoon session at 2.30. The section on tuberculosis will be held also on Tuesday afternoon. One of the sessions of the medical section will be devoted to a symposium on syphilis and its modern treatment. The papers of the surgical section and the morning session of the medical section cannot be announced at present, but will be of interest to the general practitioner.

The Councillors' meeting will be held at 12 noon on Tuesday, instead of 5 P.M., and the Cotting lunch served as usual.

The section meetings and the meeting of the council will be held at the Harvard Medical School, on Longwood Avenue, where the accommodations as regards hall, lanterns, etc., are exceptionally good. The school buildings and laboratories will be open to the Society, and special scientific exhibits or exhibits illustrating the papers of interest to members will be given in the laboratories. A provisional list of the laboratories or departments that will exhibit, subject to revision and change, is as follows:

Department of the Theory and Practice of Medicine, Department of Hygiene and Preventive Medicine, Department of Pathology, Department of Physiology, Department of Bacteriology, Department of Anatomy, Department of Histology, Department of Surgery, Department of Physiological Chemistry, Cancer Commission of Harvard University.

The Shattuck Lecture and reception will be held as usual on Tuesday evening at the Medical Library. The annual meeting on Wednesday and the discourse will be at the Medical School, after which the members will take cars to the Symphony Hall where the dinner will be served.

Arrangements have been made to hold the annual baseball game, which was instituted last year, between teams from the different District Societies. The society will, therefore, adjourn to the Country Club immediately after the dinner. The cup presented last year is now held by the Middlesex South District Society.

It is hoped that the morning section meetings will be well attended and the movement to make the annual meeting of more importance medically be given support. The quadrangle at the Medical School is large, fitted with benches and will make an ideal meeting place. There is no meeting hall in the Symphony Hall building except that in which the dinner will be served.

Channing C. Simmons, M.D.,
*Chairman Committee of Arrangements.*

### A LAY ESTIMATE OF THE DOCTOR.

Though it is unbecoming to speak one's own praise, it is sometimes not unpleasant to hear it spoken by others. Perhaps we may, therefore, be pardoned for reprinting the following portions of a recent editorial in one of our daily papers. Some of its compliments are undeserved, but some of its epigrammatic observations are good and may be consoling to those of us who, in the inevitable isolation from the rest of mankind which the experience of our profession involves, are sometimes prone to fancy that we are not appreciated:

"The doctor is altogether a special kind of person. His illusions are few. His inside information is enormous, and if, now and then,

he wears a superior smile, forgive him. He has probably just heard some remark which he knows to be fatuous or hypocritical. Again, his jokes are likely to be a bit technical, and his view of life materialistic. But if he has a brand of idealism, you can put your trust in it, for he has learned it in a hard school, and it is genuine. He has faced the worst, and can still believe the best. And if he has a religion, it will be worth coming at, for he has wrested it out of the actual battles of good and evil in our common life seen at close range.

"The lawyer we take into our confidence when we get good and ready; the clergyman we admit to parlor and dining-room; but the doctor goes into bedroom unannounced. He goes in at a time when the house, temporal and spiritual, has not been set to rights for his reception, but if what he sees there surprises him, he seldom lets it be known. In the healing of bodies he has opportunities for healing souls which could never come to a priest, and with which many a priest could not deal. He is the lay father-confessor, regardless of creed. In cities, his clubability is famous. He always fits. And clubs are justly full of him. Any club member is always safe in replying to any other's salutation, "Good evening, doctor." He is a safe man on committees; he can turn his hand to any public business, and, if left alone, discharge it creditably. He knows more psychology in five minutes than the philosopher in a week, and he is withal the least emotional of men. The peculiar thing about him is that while fighting his grim and silent battle with death without the applause of a crowd, often without pay, and sometimes without even gratitude, he seems superior to all these considerations. He is responding to a higher sort of *noblesse oblige* which is almost unintelligible to the average man, hot for the average prizes. Compared with the impetuosity of military men, the ecstasies of religious leaders, and the silent fortitude of starving artists, the frozen enthusiasm of the doctor is a very curious manifestation. It may be something in the training he gets, for, no matter what the youngster may have been, if he has anything in him it will go hard if his practice as a physician does not bring it out. And to him belongs the final reward of service, which is the increased opportunity for service."

## Correspondence.

### PARIS LETTER.

#### A FEW NOTES ON ALTITUDE CLIMATES.

*[From Our Special Correspondent.]*

PARIS, Feb. 14, 1911.

*Mr. Editor*: I have unfortunately had occasion recently to apply to my own case the ancient maxim "physician, heal thyself." That foul fiend the grippe laid me low with bronchial catarrh, and when the acute phase of the attack was past, the problem that presented itself was in what manner the wreckage could be put together and got into working order again with the briefest possible delay.

I knew that in such a detestable winter climate as Paris, with its perpetual gloom and dampness, there was not much prospect of shaking the consequences of this illness off before the advent of better weather in the spring, three months hence, which seemed a long time; so I decided to try high altitude, and took myself off to Switzerland.

I have spent many summers in Switzerland, but never since I was a lad have I been there in the winter. This experience, then, had all the charm of novelty; for Switzerland in winter is so different a proposition from Switzerland in summer that it might quite well be looked on as a new country.

In order to make clear what I shall have to say about the contrast between the winter climate of a Swiss altitude resort and Paris, it will be desirable first to make a few remarks about the meteorology of the latter. In doing so I shall strain every nerve to avoid showing animus, though this will be difficult. Twenty-six winters have I passed in this climate, and my feelings on the subject are deep; nothing but a glass *stilus*, vitriol as ink, and asbestos for paper would answer, were I to wax candid on this topic.

I think that people in general do not realize the comparative latitudes of Paris and New York, but come over here expecting to find rather a milder climate than at home. When, then, they run up against the weather article in which we deal between Nov. 1 and the end of March, their aggrieved tones are not without a comical side. Paris if transported to our eastern seaboard would fall on the northern limit of Newfoundland, or just at the mouth of the St. Lawrence, while New York if similarly brought to Europe would correspond about to Madrid or Naples! It is consequently not surprising that our climate should be a trying one, and in particular that the winters should seem long and dark.

We are so far north, here, that in midwinter in a broad open thoroughfare like the Avenue du Bois, the noon sun, on the rare occasions when we do see it, appears like a pale-red disk just over the tops of the houses. It is no exaggeration to say, again, that there are spells when for three, four and even five consecutive weeks the sun is not visible at all.

Paris lies in a basin, surrounded by low hills, back of which comes a wide belt of forests, through which pass several rivers. The dampness of the air, which, next to the absence of sun, is the great characteristic of this climate in winter, is consequently intense. A good deal of the time it approaches saturation point, and just as soon as the light wanes, at three or four o'clock, it precipitates, comes down in insensible rain, and wets everything until next day. This dampness seems to hang over the city like a blanket for weeks at a time, shutting out the light, and keeping us wet and chilled to the bone. The chilliness it engenders is something awful; at + 5° C. the cold is far more penetrating in Paris than at − 10° C. in the mountains, of which more anon.

The final feature in our climate here is the rank dust. The low-bodied motors fly along and churn up the irritating dirt coming from the tarred pavements, which, in addition, whenever the thermometer approaches the freezing point, are not watered by order of the authorities. So you will realize the outlook in winter in this city for a patient with a good attack of bronchial catarrh! Now for the other side of the picture.

The cars brought me to Lake Geneva, and then I took a little electric train that zigzagged manfully up a steep grade. Everything was misty there, too; that end of the lake is notorious for its winter fogs, and my first impression was that it had hardly been worth while leaving a Paris fog for a Swiss one. But this conclusion was premature, for by the time we had risen to 2,500 feet the clouds lay spread out over the lake below us like billows of cotton, and at 3,000 we were in an entirely different universe, a region of bright sunshine, deep blue skies, rocks, pines and a heavy layer of snow. Not only was the physical world changed, but the population as well; for at each station the train was boarded by bands of young people of both sexes, dressed in white sweaters and knitted caps, and carrying skates, skis, sleds, etc., all bound to a sporting center, brown, freckled, hardy-looking and having the time of their lives. You have probably heard that during the past few years all of the high resorts of

Switzerland have opened up in winter for a season of mountain sports from December to March, and that this idea has proved a perfect gold mine. It can furthermore be remarked, in parenthesis, — for the benefit of those who do not find the pleasure they derive in travel heightened by running across herds of German trippers, — that, so far at least, they do not seem to have taken to these winter sports to any extent; while the English, who formerly used to frequent Switzerland in summer but had been purely and simply driven away from it by the ever-increasing invasion of the Germans, have now come back to it again in winter and form the main element at these resorts.

I left all these delightful young people at the center they had been making for, where I devoutly hope they had the ripping frolic that they were manifestly out after, and continued on in the little train for some distance farther. Where I went I shall not say; there are some good things it is well to keep for home consumption. Let it suffice that up among the Vaudois Alps there is an interesting old chalet, now a quiet little inn, but formerly the homestead of one of the local families of importance. It has been there since 1750; its hospitable arms opened and took me in, and I was graciously greeted by the little band of choice spirits stopping there, — also people who know a good thing when they have found it, and don't go around talking about it. However, here is a photograph of the chalet, just to make your mouths water!



The altitude was about 3,000, deep snow covered all the environs, the air was stingingly cold and crisp, and the pines added the proper tone to the landscape and, incidentally, held the snow to the mountainsides and prevented it from slipping down on to our heads. To breathe that air was simply a benediction, and I felt better inside of an hour. So long as the sun remained visible we were as comfortable as you please; but as soon as it disappeared, things began to happen. I who was new at this game was simply appalled to see the rate at which the mercury fell. Each time I took a turn to the front door it had dropped a couple of degrees Centigrade, and I fully expected it at that pace to finally sink into the bulb and dry up on the bottom. This speed, however, naturally did not continue; still, by bedtime the thermometer stood at — 10° C., and when I arose the next morning it marked — 16° C., a temperature I have never seen since I left America.

From that time on I devoted my energies to getting my damaged mucous membranes into shape again. But really, it was too dead easy, in such an air as that. I observed very soon that my cough consisted of two distinct elements — the irritative and the mechanical; the former had evidently been kept going in the lowlands by the damp, dust, smoke, germs, etc., for it ceased altogether in the mountains inside of a day or two, leaving nothing but the mechanical side of the question. Whenever mucus began to obstruct a tube, along came the cough-broom and swept it out, and that was the end of the matter. No mucus, no cough. This was a very evident gain, for with the disappearance of the everlasting, ineffective, irritative cough there naturally ensued much less bronchial congestion and consequently less mucous secretion.

Another great feature of this altitude climate was its remarkable dryness. Thus a sponge hung out of the window up there would dry in a short space of time, whereas in Paris you might hang it out by the week without result. Dampness alone, without dust or germs, irritates a mucous membrane, and in addition it naturally impedes pulmonary evaporation, an important factor in troubles of the respiratory tract.

As for germs, dust, smoke and other city abominations, with this thick mantle of snow they were, of course, totally absent. Up there it was perfectly feasible, even at the start, with bronchial tubes still inflamed, and in spite of the intense and to me altogether unaccustomed cold, to take a full breath down to the farthest thoracic limit without the slightest inclination to cough; on the contrary, it seemed positively soothing to the bronchial tract. The more of this air that penetrated, the better it felt.

I noticed another peculiarity up there that I confess I did not altogether understand, as in it I was in total opposition to the rest of the visitors. We had a cold and a warm side of our valley; into the former the sun *never* penetrates during winter, as it is shut out by a range of hills, while on the latter the sun shone between 9.30 and 4 P.M. Now the rest of the people stuck to the sunny side of the valley, and could not be tempted away; but I used to go down to the stream, cross the picturesque old stone arch thrown over it, and make for the road in the shade where the natives were hard at work getting out logs and hauling them on runners to the station. The climate over there seemed to key me up to concert-pitch, and the bitter snapping cold evidently discouraged my germs to such a degree that they finally gave the affair up. For cold it was over there, and no mistake, something deadly. The horses would come jingling along, their harness covered with bells, and looking more like hugh white porcupines than anything else. They had their winter coats, of course, and the aqueous vapor from their breath, as they puffed over the weight of the logs, congealed instantly on the nearest hairs, until all their front portions were frosted white, the result being most peculiar.

I never grew tired of walking on that log road. This was real winter, as I had not seen it since my boyhood. The snow scrunched beneath my heels, my ears became numb, I had to trot to keep the circulation going, but the colder it was, the finer I felt. There was, a few kilometers below our place, a point where the valley contracted, and the stream ran through a deep gorge, the road being carried along among the pines high up on one side. This was the coldest place of all, and I delighted in it, only I had to keep on a brisk move to remain alive. The snow there was so dry as to be almost like powder.

I noticed a discussion in a paper the other day as to whether there is such a thing as a dry fog. We have, in Paris, mists of all degrees, from those that *seem* dry, and in which the sidewalks are not even moist, to those in which the trees and walls simply flow with water and the streets are filled with mud. But up in these Alps I saw what the Scandinavians call a "frost-mist," a very beautiful sight. For a day our weather was milder, and then one night down went the mercury again head over heels, and during the next forenoon the valley was filled with a typical frost-mist, white above and purplish-black beneath. As the cold was intense such a mist can only be composed of minute atoms of ice; but as a matter of course an ordinary fog always consists of moisture, the seeming dryness of some, which is very real, being due to the relative slight degree of saturation. I found that the frost-mist did not irritate the air-passages at all.

A further element that makes such cold quite tolerable is the total absence of wind, which I am informed is characteristic of these high Alpine valleys in winter; of this St. Morits is a striking instance. The one great drawback

to that place in summer is the furious winds and dust; but in winter it is as still as indoors.

The remark may be made that my treatment of bronchial catarrh is a novel and startling one! All I can reply is that it succeeded, and that by the end of a week I was transformed. It goes without saying that the bracing climate acted as an energetic stimulant to the general condition, and that I ate and exercised as I haven't for years. As for sleeping, the village was simply a grave at night — not the slightest sound, not a rooster, not even a clock for the hours. "S."

## ANTISEPTIC INHALATIONS IN PULMONARY TUBERCULOSIS.

NEW YORK, March 3, 1911.

*Mr. Editor:* May I ask you to give space to the following letter just received from Dr. F. Morris Class, physician in charge of tuberculosis work at the Vanderbilt Clinic in this city, which it seems to me speaks for itself.

I could duplicate or triplicate it readily.

Dr. Class writes:

"I am using zinc perforators with creosote in practically every case under my care in Vanderbilt Clinic in whom medication for excessive cough, etc., seems necessary. I vary it sometimes with periods in which I prescribe a formalin combination, as some tire of the continuous odor of the creosote. I almost never give a depressant mixture by mouth; I never give a nauseant. I use straight morphine in the vicious terminal stages.

"At any time, should you care to visit the Day Camp on the roof of Vanderbilt Clinic, you will see a more or less large number of the zinc inhalers in use.

"In a recent article that I have just written, I have taken the liberty of quoting you in regard to inhalers. The article is called 'The Treatment of Cough in the Consumptive.'"

Very truly yours,
BEVERLEY ROBINSON, M.D.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, FEB. 25, 1911.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | 1,582 | 455 | Waltham | 7 | 0 |
| Chicago | 680 | 171 | Brookline | 10 | 1 |
| Philadelphia | — | — | Chicopee | 3 | 1 |
| St. Louis | — | — | Gloucester | 6 | — |
| Baltimore | — | — | Medford | 5 | 1 |
| Cleveland | — | — | North Adams | 8 | 2 |
| Buffalo | — | — | Northampton | 8 | 0 |
| Pittsburg | — | — | Beverly | 9 | 2 |
| Cincinnati | — | — | Revere | 3 | — |
| Milwaukee | — | — | Leominster | 5 | 1 |
| Washington | — | — | Attleboro | 5 | 1 |
| Providence | — | — | Westfield | 5 | 1 |
| Boston | 280 | 51 | Peabody | — | — |
| Worcester | 59 | 10 | Melrose | 0 | — |
| Fall River | 51 | 23 | Hyde Park | 3 | 0 |
| Lowell | 34 | 9 | Woburn | 4 | 2 |
| Cambridge | 40 | 10 | Newburyport | 8 | — |
| New Bedford | 41 | 19 | Gardner | 6 | 1 |
| Lynn | 34 | 7 | Marlboro | 3 | 0 |
| Springfield | 22 | 4 | Clinton | 5 | — |
| Lawrence | 29 | 10 | Milford | 6 | 1 |
| Somerville | 30 | 7 | Adams | 2 | 1 |
| Holyoke | 18 | 6 | Framingham | 1 | 0 |
| Brockton | 14 | 3 | Weymouth | — | — |
| Malden | 11 | 2 | Watertown | 2 | 0 |
| Haverhill | 13 | 1 | Southbridge | 2 | 1 |
| Salem | 18 | 5 | Plymouth | — | — |
| Newton | 10 | 3 | Webster | 1 | — |
| Fitchburg | 8 | — | Methuen | 3 | 1 |
| Taunton | 14 | 4 | Wakefield | — | — |
| Everett | 7 | 1 | Arlington | 3 | 1 |
| Quincy | 7 | 2 | Greenfield | 3 | — |
| Chelsea | 22 | 5 | Winthrop | 2 | — |
| Pittsfield | 5 | — | | | |

## SOCIETY NOTICES.

NEW ENGLAND HOSPITAL MEDICAL SOCIETY. — There will be a meeting of the New England Hospital Medical Society, at Kensington Building, Boylston Street, Thursday, March 16, at 7.30 P.M. The subject for the evening is "Social Service Work," and talks will be given by Dr. Jeffrey R. Brackett and Miss Ida Cannon. Light refreshments after the meeting and all are cordially invited.

MARGARET L. NOYES, M.D.,
*Secretary.*

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A meeting of the society will be held in John Ware Hall, Medical Library Building, on Monday, March 20, 1911, at 8.15 P.M. Addresses: "The History of the Royal College of Physicians of London," Dr. Thomas McCrae. "Some Medical Gossip Pertaining to the Last Illness of Queen Anne of England," Dr. Charles G. Cumston. "Science at the Medieval Universities," Dr. James J. Walsh. Members of the Suffolk District Medical Society are cordially invited to attend.

ROBERT M. GREEN, M.D., *Secretary,*
78 Marlborough Street.

BOSTON MEDICAL LIBRARY IN CONJUNCTION WITH THE SUFFOLK DISTRICT MEDICAL SOCIETY. — Medical Section Meeting, John Ware Hall, Wednesday, March 15, 1911, at 8.15 P.M. "Some of the Effects of Intense Heat other than Heat Stroke and Heat Prostration," By David L. Edsall, M.D., Philadelphia. Discussion. Light refreshments after the meeting.

EDWIN A. LOCKE, M.D., *Secretary,* 311 Beacon St.
HENRY JACKSON, M.D., *Chairman,* 380 Marlborough St.

## RECENT DEATHS.

DR. DANIEL MAYNARD BURGESS, retired, died at his home in New York on Feb. 28. He was born at Richfield, N. Y., on Dec. 21, 1828, and was graduated from the medical department of the University of the City of New York in 1855. While an interne at Bellevue Hospital he did excellent work during an epidemic of cholera, and later he studied for some time abroad. For thirty-two years Dr. Burgess was health inspector for the United States government at Havana, where he became widely known as an expert on yellow fever. He remained in this position until the outbreak of the Spanish-American War.

DR. DANIEL A. CURRY, of Englewood, N. J., died on Feb. 28, at the age of seventy years. He was graduated from the medical department of the University of Buffalo in 1869, and had practiced for thirty years at Englewood, of which city he was the first mayor. During the Spanish-American War he served as surgeon of the Fifth New Jersey Regiment.

## BOOKS AND PAMPHLETS RECEIVED.

La Preparation 606 par le Dr. Leon Bizard et Louis Lesage. Paris: Vigot Frères. 1911.

The Treatment of Syphilis. By Dr. Johannes Bresler. Rebman Co. 1911.

The Bradshaw Lecture on Cancer. By Sir Alfred Pearce Gould, K.C.V.O. London: John Bale, Sons & Danielsson, Ltd.

Remedial Gymnastics for Heart Affections. Translated by John George Garson, M.D. New York, N. Y.: Paul Hoeber. 1911.

Sur un Cas d'Albumosurie de Bence-Jones par MM. P. Savy et F. Sarvonat. Paris: A. Poinat. 1910.

Teneur en Chaux de l'Expectoration des Tuberculeux Pulmonaires par le Docteur Sarvonat. Paris: A. Poinat. 1911.

Proceedings of the Pathological Society of Philadelphia. New series. Vol. XIII. No. 4.

Teneur en Chaux de l'Urine des Tuberculeux Pulmonaires par F. Sarvonat et J. Rebattu. Paris: A. Poinat. 1910.

Memoires et Travaux de la Société des Ingenieurs Civils de France. Paris: Hôtel de la Société. 1910.

Il Servizio Igienico-Sanitario nella Emigrazione Transoceanica per l'Anno 1909. Relazione e Statistica. Roma. 1910.

Nervous and Mental Disease Monograph Series No. 1. Outlines of Psychiatry. By William A. White, M.D.

Report of the Association Sanatorium. Hazelwood, Jefferson Co., Ky.

Prefecture de Departement de la Seine. Rapport A. M. Le Prefet. Paris. 1910.

Treasury Department, Public Health Bulletin No. 42. Disinfectants, their Use and Application in the Prevention of Communicable Diseases. By Thomas B. McClintic. Washington. 1911.

JOHNS HOPKINS HOSPITAL LIBRARY



## Original Articles.

### THE LUMBO-SACRAL ARTICULATION. AN EXPLANATION OF MANY CASES OF "LUMBAGO," "SCIATICA" AND PARAPLEGIA.

BY JOEL E. GOLDTHWAIT, M.D., BOSTON.

An experience of the writer within the past year in connection with the treatment of a patient with a spinal lesion was so disastrous to the patient and so distressing to the writer that a series of investigations were started in the hope of bringing some relief to the patient and at the same time of preventing such happenings in the future. It is this study which represents the basis of this communication, and in order that it may be fully understood the case that led to it is first reported.

The patient was a man thirty-nine years of age, with nothing in his family history or previous history of importance, except an attack of hypertrophic arthritis (osteo-arthritis) of the lumbar spine seven years previous for which it was necessary for him to wear a support for several months. From this he entirely recovered and had up to the time of the accident led a very active life, both physically and mentally.

In January, 1910, when very tired from a long stress of work, in lifting a heavy object he strained his back, producing a distinct displacement of the sacro-iliac joint upon the right side. The condition was recognized at once, and under nitrous oxide anesthesia the bones were replaced without difficulty, there being a perfectly definite slip as the replacement occurred. This was followed by a fairly normal recovery, so that in about three months the subjective symptoms had largely disappeared.

At that time, after a fairly long car journey, he carried a very heavy suit case in one hand, without change, for a distance of over half a mile, with the result that the back became painful, so that two days later he was seen by the writer because of pain and sensitiveness in the lower back. At that time the sacro-iliac joints were shown to be strained, but the bones were not displaced.

The next night, in turning over in bed, he felt a distinct slip exactly similar in all its sensations to that felt at the time of the first displacement.

In the morning, after having a restless night, he was able to get up and take his usual tub bath. On trying to get out of the tub, in leaning forward and straining to get up, something slipped in his back, entirely different from anything he had before experienced. The body was drawn forward and to the left; there was intense pain so that it was with great difficulty that he was able to get back to his room, and the suffering continued until he was seen by the writer four hours later. At that time the body was held bent forward and to the left. There was extreme tenderness in the sacral region, with pain extending into the legs, the right being much worse than the left.

Supposing that the condition represented a sacro-iliac displacement with the extreme lateral deformity which is sometimes seen, under light ether anesthesia the sacro-iliac joint was manipulated and slipped into place, a perfectly definite slip developing with the replacement. From this the expected relief did not come, the body was still drawn forward and to the left, and the severe pain continued. Supposing that the continuance of the symptoms was due to an imperfect replacement of the bone, or that the difficulty was still in the sacro-iliac joint, an attempt was made later in the day to hyperextend the spine to more perfectly effect the reposition and at the same time to apply a plaster of Paris jacket for fixation. The patient was raised by the writer and his assistant, no anesthetic being used, and placed upon the back on the frame used for such purposes. As he was placed in position there was a moment of intense pain followed by complete relaxation, a condition which has been seen by the writer several times when a displacement of the sacro-iliac joint has been present and has been corrected in this way. Supposing that this was what the relaxation meant, a jacket was hurriedly applied, but in a very few moments numbness of the legs developed. Supposing that this was due to a strained position with the legs extended, a pillow was placed under the knees, but the condition increased until in a few moments there was complete loss of sensation. The jacket was hurried, the patient being on the frame in all not more than ten minutes, and as he was taken off, gas escaped from the bowel, there being a complete paralysis of the rectal and bladder sphincters, as well as complete sensory and motor paralysis of the legs. The patient was put in bed and turned over to the left side. In a few moments power and sensation began to return in the legs so that within two hours the use was normal, and for the sensory disturbance there there was left only a slight numbness in the dorsum of the right foot. During the night the patient twice rolled on to the back, and both times the paralysis returned, to disappear, only less completely than it did at the first time, when he was again turned on to the side. The next morning there was a complete paraplegia present, except that the sensation had returned to the anterior part of the thighs.

The patient was seen by numerous consultants, but in spite of their assistance he remained in practically the same condition, with paralysis of the sphincters and paralysis of both legs, both sensory and motor. There was much pain of an explosive or lancinating character referred to the legs and feet, with a particularly constant and severe pain referred to the upper part of the rectum. This point of sensitiveness could easily be reached through the rectum and was located at the upper part of the sacrum, definitely, as the condition is now understood, at the lumbo-sacral articulation.

At the end of six weeks, there having been practically no improvement, and the diagnosis still being uncertain, an operation for the exploration of the spinal canal was performed by Dr. Harvey Cushing, and the spinous processes removed from the first lumbar vertebra to the

middle of the sacral region. In this exploration nothing abnormal was found except a narrowing of the osseous canal at the lumbo-sacral junction. The cauda equina appeared normal; there was no evidence of hemorrhage, and no evidence of new growth. No immediate improvement followed the operation, but a gradual improvement has taken place since and this is still going on. Both the sensory and motor conditions have improved, the sensory having improved more rapidly than the motor, and at the present time, eight months after the accident, the patient is able to move about with canes, there still being considerable pain, especially in the rectum.

Naturally such a result led not only to great distress of mind to the surgeon, but to much speculation as to the cause of the paralysis, partly because of the prognosis to the patient and partly because the procedure which led to the paralysis must often be repeated in the treatment of spinal diseases. It was evident from the different opinions which were advanced by the different consultants that the case was unique and that the nature of the condition was not understood. It was also evident that unless the cause of the difficulty could be understood, other patients could not be protected, nor could the surgeon approach his work with any proper degree of composure.

In the attempt that has been made to explain the condition the writer is indebted to Prof. Thomas Dwight, of the Anatomical Department of the Harvard Medical School, for his assistance and his encouragement. With him the writer is also indebted to Professor Warren and Dr. David Cheever, of the same department, and to Dr. W. F. Whitney, of the Warren Museum, for assistance in obtaining material upon which the anatomical studies were made.

In the first place, in the study of the case, it was evident to the writer, and the opinion was shared by Dr. E. W. Taylor, who was in frequent consultation, that whatever happened at the time of the development of the paralysis, that the spinal cord or cauda equina could not have been torn or crushed, because after there had been complete paraplegia, when the patient was turned upon the side, the paralysis, both sensory and motor, almost wholly disappeared. This was repeated twice during the first night, as the patient rolled from the side to the back. It furthermore did not seem that the paralysis could be explained by hemorrhage, since to have developed so rapidly, a very large hemorrhage would have been necessary, and with such a hemorrhage the temporary recovery from the change of position would hardly be possible. Hemorrhage into the cord itself did not seem possible for the same reason and also because of the distribution of the paralysis. Tumor in the spinal canal or disease of the bones was eliminated by the operation.

The more it was studied, the more it seemed that some mechanical element must be the real difficulty, and that the point of pressure was probably somewhere below the giving off of the lumbo-sacral cord, although not much below this because all of the nerves making up the cauda equina below this point were involved. It was obviously spinal, since no lesion or involvement of the nerve roots or of the sacro-iliac joints could explain so complete a bilateral condition.

The more the case was studied, the more definite the lumbo-sacral articulation seemed to represent the seat of the difficulty, and this was strengthened by the fact that when the patient was placed upon his back to have the jacket applied a few days after the laminectomy there was something of the same sensation that was present when the first jacket was applied, and this was at once relieved by raising the buttocks. A similar sensation also developed when he was placed upon the back to have the x-ray taken.

## ANATOMY.

The anatomical study which was carried on in order to explain the condition is as follows.

The lumbo-sacral articulation in its main part inclines downward and forward about 30° (Fig. 1) when the person is standing erect, and except for the articular processes at the back, the spine would naturally slide forward upon the sacrum. The ligaments under normal conditions represent considerable support, but they would naturally be stretched in a short time and displacement of the bones take place except for these articular processes.

The lumbo-sacral joint is capable of considerable motion, fully one half of the motion of the trunk below the lower dorsal region being made in this articulation and the one just above it, the remainder of the motion being distributed between the rest of the lumbar spine and the sacro-iliac joints. In forward bending, since the bodies of the vertebræ are so large, the motion at the lumbo-sacral joint is made partly by the changes in the intervertebral disk, but chiefly by the articular processes of the fifth lumbar vertebra sliding upward upon the opposing processes on the sacrum. Naturally if the motion is carried too far, the articular processes will be separated and the vertebra can then slip forward upon the sacrum. If this is continued, the last lumbar vertebra may slip entirely off the vertebral articulation of the sacrum, as is shown in Figs. 2, 3 and 4, and a true dislocation or a spondylolisthesis results. In such a displacement, since the articular processes of the fifth lumbar extend below the lower surface of the body of the bone, the body of the fifth is raised so much above the superior surface of the sacrum that there is practically always a space for the cauda equina, — this, together with the fact that the change takes place slowly, making gradual readjustment possible and explaining the fact that paralysis under such conditions does not result. The relation of the bones to each other as such displacement takes place with the space for the cauda equina constantly present is shown in Figs. 5 and 6, and Figs. 7 and 8.

If, now, the displacement of the fifth lumbar or the separation of the articular processes takes

place only upon one side, a much more serious condition at once results. The displaced articulation slides forward and to the outside (Figs. 9 and 10), with the result that the whole spine with the body of the fifth lumbar vertebra is rotated forward on the side of the displacement (Figs. 9 and 11). With this rotation and with the moving forward of the displaced articular process, the other process is drawn nearer to the center of the body (Figs. 9 and 10), at the same time necessarily being drawn forward, with the result that the spinal canal is narrowed (Fig. 10), and the narrowing may be so marked that the entire cauda equina is compressed, with paralysis, either complete or partial, below this point.

Such displacements may be due to simple direct violence in which the body is bent sharply forward or to one side, but unless some of the contributing factors that are to be described are present, it is probable, since the ligamentous protection of the joint is so strong, that in such displacement the bones would be broken at such time as well as dislocated, making the condition much more hopeless.

Of the contributing factors that could favor such displacements, in the first place simple postural habits in which the back is flattened (Fig. 12) must result in making the long axis of the sacrum more nearly vertical, and consequently the lumbo-sacral articulation more nearly horizontal. In this position the interspinous ligament in the lumbo-sacral portion of the spine must be stretched. With this naturally the motions at that joint will be more free and the articular processes must be drawn more or less apart with displacement if the position is increased or if any of the following conditions are present.

### ARTICULAR PROCESSES.

If, as the result of congenital conditions, the articular processes are shorter than normal, or if the lumbo-sacral articulation has the dorsal characteristics with the articular processes facing forward (the long axis of the joint being lateral) instead of lumbar characteristics with the articulation facing laterally (the long axis being antero-posterior), then displacement of the fifth lumbar forward upon the sacrum becomes more easy.

Of these anatomical peculiarities of the articular processes there is a wide range. The variation in the length and inclination of the processes is shown in Fig. 13.

The variation in the shape of the articulations is very great, and of these variations there are two types which are so common that numerically both might be said to be normal. One of these is with the articulation sharply crescentic (Fig. 14), the lateral portion extending backward almost at a right angle with the anterior or transverse portion of the articulation, and the greater portion of the articulation upon the process of the fifth lumbar facing outward at the side of the body. Into the crescentic articulation upon each side of the sacrum the articular processes of the fifth lumbar vertebra fit, making naturally a very stable joint.

The other type consists of a flat articular surface with the axis nearly transverse (Fig. 15) so that the plane of the articulation of the process of the fifth lumbar vertebra faces forward. It is obvious that such an articulation is much less stable than the preceding type, and when it is realized that there is often considerable forward inclination instead of the usual vertical position in this articulation, together with the fact that the length of the articular processes varies, both features being suggested in Fig. 13, the instability is more apparent.

While these two types are common, and usually exist as distinct representatives of one or the other type, there are many variations from these, either type merging more or less into the other. Not only this, but in several specimens examined both types have existed in the same individual, one side showing one form and the other side the other form (Fig. 16). The effect which such peculiarities of form must have upon the motion or stability of the part must be evident. Under such conditions, in bending toward the side with the crescentic articulation there is nothing upon the opposite side to prevent the upper part of the crescentic articulation acting as a fulcrum and the joint on the other side being strained or weakened.

If, now, for any reason, such as habit of posture, the level of the top of the sacrum is changed so that one side is lower than the other, the separation of the lumbo-sacral articulations will naturally take place more easily, and most easily upon the side on which the sacrum is lower. It is probable that in displacements of the sacro-iliac joint (a condition which is almost always unilateral) such changes in the level of the top of the sacrum do take place, and it seems to the writer that the influence which this must have upon the stability and possible displacements of the lumbo-sacral joint must be constantly borne in mind in connection with these common and previously considered simple (sacro-iliac) displacements. The possibility of there being the short articular processes, or of the shape of the articulations being unlike upon the two sides, or of the transverse processes being peculiar (a condition to be described later) must be recognized and proper precautions taken to prevent unpleasant complications.

### TRANSVERSE PROCESSES.

Another factor which seems to the writer of as much if not of more importance than the conditions which have been described is the marked variation in the length and shape of the transverse processes of the fifth lumbar vertebra, and also the variation in the height of the superior aspects of the lateral portions of the sacrum.

Of the transverse processes the variations range from the short and small processes (Fig. 17), which could cause no possible interference with the lateral motions of the body, to the long and broad (Fig. 18) process, which in its extreme is fully sacralized and joined to the sacrum (Fig. 19). The effect which such a process would have

upon the lateral bending of the body is evident. If the process were fused to the sacrum there would, of course, be no motion at this point. If it were free, the impinging of the end of this process against the top of the sacrum (often forming a true joint, Fig. 20), or the posterior part of the ilium, would not only limit the motion, but if repeated would result in sensitiveness at the point of contact.

With this variation in the shape of the transverse processes the two sides are rarely the same, and this difference easily explains the difference, under such conditions, in the ability to bend to the sides. On one side the bending may be much limited, while upon the other side it may be quite free.

### SACRAL PECULIARITIES OF FORM.

Of the sacral variations, the superior surface of the lateral portions may be flat so as to be lower than the spinal articular surface, or they may be raised considerably so that they are higher than this articulation (Fig. 21), a condition which in the extreme is part of the fusion with the transverse process of the fifth lumbar, the sacralization just described. The effect of such formation upon the side bending of the body is obvious. With the flat surface the full freedom in the absence of other interference would exist, while with the raised surface the amount of the limitation would depend upon the extent of the elevation and also naturally upon the shape of the corresponding transverse processes of the vertebra just above.

The effect which such conditions must have upon the stability of the lumbo-sacral joint is probably perfectly obvious, but since this seems to the writer to be one of the most important points in the communication, elaboration seems wise.

With the small and short transverse process, or with the flat or regular sacral surface, these features naturally contribute little if any to the direct stability or the instability of the lumbo-sacral joint. If, however, the transverse processes are long or broad or the sacral surface is raised or irregular, either or both of these conditions not only limit the side bending, but in such bending the point of contact must, if force is applied, represent the fulcrum, the direct effect of which would be to pry apart the articulation of the articular processes upon the opposite side.

If with this at the time of the application of the force the body is also inclined forward, in which position the articular processes must naturally be partly separated, the stability of the joint will naturally be less and the harmful effect of such application of force be more easily produced.

As still further contributing factors to the limitation of motion in this region as well as the differences in the stability, the variations in the width of the upper part of the sacrum must also be considered. This variation is also shown in Fig. 21. With this also the shape and width of the posterior parts of the wings of the ilia vary. It is easy to see that these facts make it possible for the long transverse processes of the fifth to at times strike against the ilia in certain motions and thus represent another possible cause of pain or displacement. Still farther, the strong ilio-lumbar and the lumbo-sacral ligaments extend from the transverse processes of the fifth to the posterior and superior portions of the crest of the ilia and to the superior surface of the sacrum. Under ordinary conditions these naturally increase the stability of the lumbo-sacral joint, but if the relation of the bones is changed upon either side, as would exist when the usual unilateral sacro-iliac displacement takes place, the action of these ligaments must be changed. In the usual displacement, which is with the sacrum backward, or the ilium forward, the iliac attachment of the ilio-lumbar ligament is moved forward, with the result that it must tend to draw the transverse process forward upon that side. Since with this the backward movement of the sacrum at the top must tend to separate the articular processes, it is obvious that with the possible presence of some of the irregularities of formation which have been described, the necessary instability of the lumbo-sacral joint under such conditions must be apparent.

If with this the elevation of the two sides of the sacrum is different, as might occur if a sacro-iliac displacement existed, the ease with which displacement at the lumbo-sacral articulation in connection with the application of force as just described would naturally be greater.

### MECHANISM OF THE DEVELOPMENT OF THE PARALYSIS.

If, now, the articulation upon one side is drawn apart or separated and with this the articular process of the fifth lumbar has slipped forward, as must occur almost at once in such separation, an attempt be made to correct the necessary lateral and forward bend of the body without first correcting the position of the articular processes, the possibility of harmful results must be apparent. If the correction is attempted with the frame commonly used in the application of plaster of Paris jackets, in which the body is extended or hyperextended, the result must be that the displaced articular process of the fifth is forced more deeply into the groove in front and to the outside of the articular process upon the sacrum, and since both processes are wedge-shaped from tip to base, such crowding together must cause more rotation of the spine and must draw the articular process of the fifth of the opposite side toward the center of the body. At the same time, because of the rotation which has taken place with the bones above the sacrum, the process must be drawn somewhat forward as well as toward the center.

The effect of this upon the structures passing through the spinal canal must be apparent. The canal must be narrowed, and if the weight of the body is applied directly to the bones of the spine, as it is with the use of the frame here mentioned, with the articular processes of the



FIG. 1. Spalteholz.

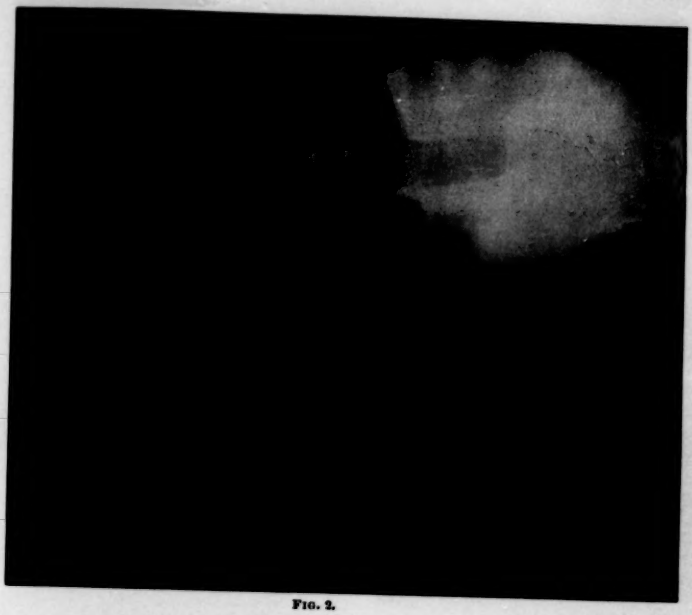


FIG. 2.



FIG. 3.



FIG. 4.



FIG. 5.



FIG. 6.



FIG. 7.



FIG. 8.

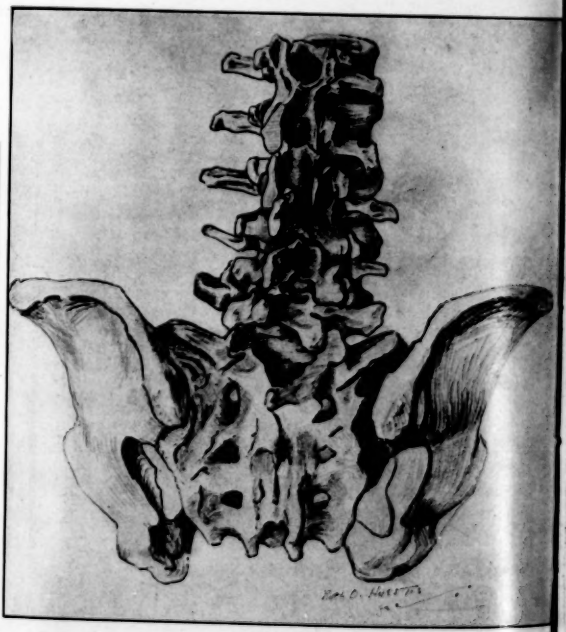


FIG. 9.

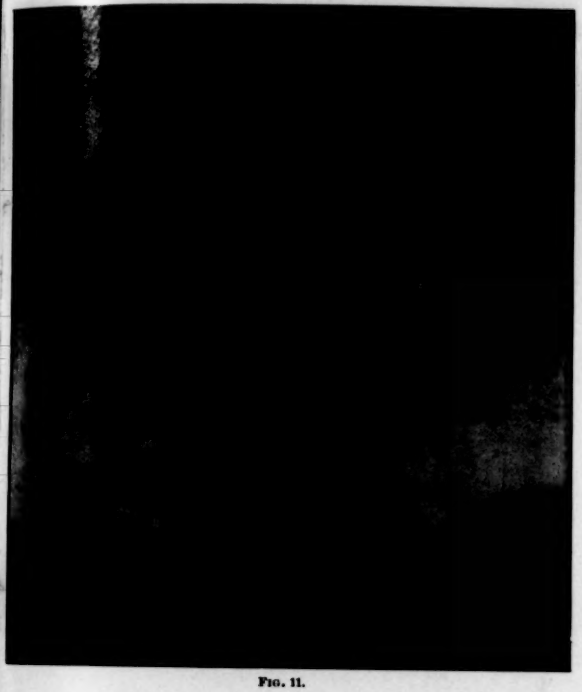


Fig. 11.



Fig. 12.

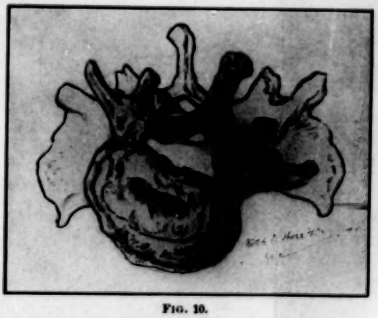


Fig. 10.

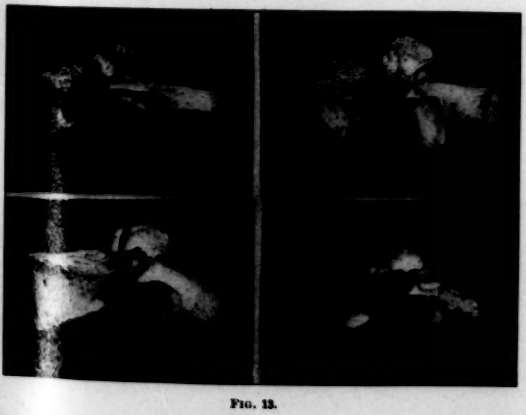


Fig. 13.



Fig. 14.



FIG. 15.



FIG. 16.



FIG. 17.



FIG. 18.

FIG. 19.

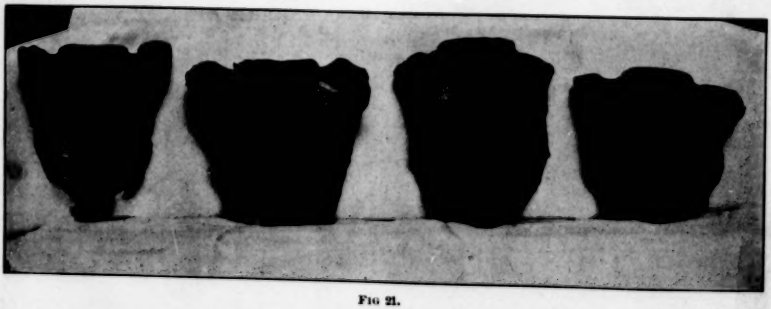


FIG 21.



FIG. 20.



FIG. 22.



FIG. 24.



FIG. 23.

fifth no longer held back by their opposing articulations on the sacrum, this vertebra, with, of course, the spine above, must be pushed forward and the articular process that was drawn toward the center of the body is crowded still farther into the spinal canal, with compression of the cauda equina. If with this the thighs are allowed to sag backward, as is usual in the hyperextended position, the pressure upon the cauda equina will be greater.

### INTERVERTEBRAL DISK.

Another element, which was not at first appreciated, but which is undoubtedly of much importance as a direct cause of the paralysis, consists in the formation and possible displacement of the intervertebral disk, lying between the body of the vertebra and the sacrum. This structure, as is peculiar to the same structures in the rest of the spine, is made of two parts, one the peripheral or outer portion, called the "annulus fibrosus," the other the central portion, called the "nucleus pulposus." Histologically, the two parts are quite unlike, the outer part being made up of concentric layers of connective tissue fibers, and serves to assist partly in holding the vertebræ together, but probably the more important function is to hold the central or pulpous portion confined so that its shape can be preserved. The central portion is an oval mass of fibro-cartilage which exists under high pressure.[1] This is placed a little back of the center of the disk and practically represents the point upon which the weight of the body is balanced, motions of the body in bending being made upon this as a center. The pressure under which this pulpous portion exists and upon which its importance as the pivotal point in the body motion must depend is at once apparent if a sagittal section of the spine is made. In this, this "pulpous" or central portion bulges markedly, while the remaining or outer portion does not alter its position. At the same time, in such a section, the histological differences between the two portions of the disk is easily apparent.

If, now, with such a condition existing the spine is bent in any direction so far that the attachment of the outer or annular part of this cartilage is separated from the bone, the result must be that since the confining element of this central or pulpous portion is removed, it forces the detached outer portion outward and projects beyond the edge of the vertebra. If, now, this separation of the outer portion of the disk occur at the back, as might easily occur if the articular process had been separated or displaced as has been described, the result must be that the detached portion of the disk is crowded backward and must narrow the spinal canal. If the articular processes have been separated upon one side, naturally the separation of the intervertebral disk will occur chiefly upon the side of the separation or away from the side toward which the body is bent. This would naturally result in there being more paralysis or irritation of the cauda equina upon one side. The projection of the disk into the canal when the posterior part is separated is shown in Fig. 22. That which shows of the disk projecting backward in this drawing is schematic, since if the sagittal section were made the projection would naturally be toward the center, that being the direction of least resistance. To demonstrate actually the backward projection into the canal, the body of the vertebra must not be disturbed, but simply with the spinal canal exposed the attachment of the disk be loosened, in which case the projection of the disk is apparent. This can easily be demonstrated in any reasonably fresh subject, but is suggested in this manner as being more easily presented and more strikingly suggestive.

The projection of the central portion if the sagittal section of the body is made is so often seen and so easily demonstrated that illustration is not considered necessary.

Because of the structure of the disk if such separation occurred the projection of the disk and the possible paralysis would be gradual in development, since the dense annular portion must be stretched by the central portion and would require some hours or possibly days for the full extent of the displacement to develop.

In the case here presented, probably this condition, as well as the displacement of the bones, existed or was produced. The patient had been very tired, so that he drooped the body as one does at such times, with strain and weakening of the posterior spinal ligaments. When in this condition in lifting, the sacro-iliac joint was slipped, this naturally leading to a temporary still greater weakening of the ligaments. This was followed, before he was fully well, and when the body was still used drooped, and with the back flat, by the strain in carrying the heavy suit case as a one-sided load. In this weakened condition, in turning over in bed, the sacro-iliac joint was again displaced. With this displacement present, so that the muscles of the back could not work naturally for protection, and with the two sides of the sacrum changed as well as the relations of the crests of the ilia to the transverse process also changed, the body was drawn forward in trying to get out of the tub, with the result that the articular processes upon the side of the displaced sacro-iliac joint were drawn apart and the body was held drawn forward and to the left by the tip of the process of the fifth which had slipped forward over the opposing process of the sacrum. This naturally led to the separation of the intervertebral disk, as has been described, and to strain or irritation of the nerves in this region, both inside and outside of the canal, explaining his great pain. The replacement of the bones at the sacro-iliac joint gave little if any relief because this was not the chief trouble. In placing the patient upon the frame the back of the body was straightened, but at the same time

[1] Spaltehols: "Hand Atlas of Human Anatomy," second edition, vol. i, p. 157. "The nucleus pulposus consists essentially of a very soft mass of fibro-cartilage with irregular connective tissue bands and contains the remains of the embryonic corda dorsalis; it is separated but not sharply from its surroundings and lies nearer the posterior circumference of the intervertebral disk (see Fig. 210). In the uninjured spinal column its constituents are under high pressure so that on cutting through the disk they project markedly."

the already displaced articular process was still farther displaced, while the other process was drawn away from its normal position toward the center of the body and crowded against the cauda equina, causing the paralysis. The temporary relief by changing the position to the left side (this side was used simply because it was more comfortable than the other) is at once apparent, as is also the intense "rectal" pain which was located directly at the lumbo-sacral articulation, and any strain for voiding the urine or moving the bowels naturally not only aggravated the pain by causing motion of the spine, but because with the attachment of the rectum at the side of the spine at this very articulation, the strained and damaged anterior ligaments were irritated. The effect of such displacement at the back upon the anterior part of the spine is well shown in Fig. 23, and easily explains the anterior or rectal pain.

The fact that the pain was increased whenever the patient was put upon the back with the legs straight is also understandable, the same explanation holding for the sensations which developed when the x-ray was taken and also when the jacket was applied after the operation. It also explains the relief of this sensation instantly obtained by raising the buttocks. In such position not only would the articular process be forced more firmly into the canal, but naturally anything which tends to hyperextend the body must compress the posterior portion of the intervertebral disk, with the result that the movable or unattached portion would be crowded outward still farther into the canal. This would naturally be corrected by flexing the body slightly so that the space at the back of the vertebra would be increased, and into this the disk would naturally retract.

The fact that the pain was not relieved by the operation is also understandable, because at this time the vertebra was not replaced nor was the probably displaced intervertebral disk confined; and while it is probable that with the increased space given for the cauda equina in removing the spinous process, sufficient room has been given so that the ultimate adjustment of the parts to their natural function will take place, the immediate relief under such circumstances could hardly be expected.

It is also evident in studying the x-ray (Fig. 11) that the original displacement, both of the sacro-iliac joint and of the spine, was made possible not only by the weakened ligaments, but also by the fact that the transverse processes of the fifth lumbar were much longer than normal, so that in bending to the side they might easily furnish the fulcrum by which the weakened joints could be pried apart when the right amount of force was applied.

Recognizing all of these features, the great weakness which was present at the junction of the hips to the body with the patient when he first tried to get up is not surprising, nor is it to be wondered at that with such a condition of imperfect relation of the bones that much use of the body brings back the old pain in the rectum and the legs.

That such anatomical conditions may exist, there can be no question, since the facts here stated can easily be verified by the study of the anatomical material which is available in any well-equipped medical school or in any museum of anatomy. This being the case, and since such conditions in varying phases are by no means rare, the symptoms which result from such conditions become of much importance, partly from the point of simple diagnosis, but quite as much for the prevention of such disasters as occurred in the case here reported.

That actual paraplegia ensuing from such cases is probably not as rare as would at first be supposed is shown by the fact that during the preparation of this paper the writer has seen a patient in frequent consultation with Dr. A. H. Crosbie, in which paraplegia existed, due, not to actual displacement of the bones, as was demonstrated by operation, but in which the intervertebral disk undoubtedly caused the compression of the cord. In this case the compression should have been chiefly upon the right side; and the patient, by change of position or manipulation, could be given a paralysis of the right leg or both legs, depending upon the degree of compression of the posterior part of the intervertebral disk. This case will undoubtedly be reported fully later by Dr. Crosbie, but is here mentioned to show that probably such cases are not as rare as the first case suggested, and the writer cannot help wondering if some of the cases of so-called transverse myelitis or cases of paraplegia without bone or neoplastic disease are not due to these features.

From that which has been shown of the anatomical types and variations it is evident that the symptoms will depend upon the special anatomical features present in the special case, but with the knowledge of these anatomical peculiarities it ought not to be difficult in any case to form a fairly correct opinion of the nature of the difficulty even without the x-ray. This latter aid is, of course, very great in such cases, but it should be used only after a careful clinical study of the case has been made and a rational explanation of the symptoms reached. The x-ray should, in other words, be used for confirmatory evidence or for showing the degree or extent of any special feature that may be present, such as how long or how wide a transverse process may be, the fact that it is peculiar in its formation having been determined before the x-ray was taken. Unless this is done, the emphasis may be put upon some anatomical peculiarity which undoubtedly exists, but which is of no particular importance in the given case.

Of the special symptoms, it is obvious that with paralysis present, as was present in this case, coming on suddenly after such treatment, in the light of our present knowledge there can be little question as to the nature of the trouble. The only questions would be of treatment, and it seems to the writer that where the

displacement has occurred, operation for the purpose of cutting down on to the displaced bones and replacing them is the only safe procedure. Since the cord is already compressed, any manipulation without open incision would involve so much risk of permanently damaging the cord that it should not be attempted. At such time, because of the probable separation of the intervertebral disk and its projection into the spinal canal, the spinous process of the fifth, to increase the space in the canal, should be removed.

If the cord has not been compressed, but if the articular process upon one side has become separated with the resulting forward and lateral list of the body, it seems perfectly safe to attempt to correct such a condition by manipulation alone. In such cases, the displaced process has probably only just caught upon the top of the process below, and as yet the articulation upon the other side has not been seriously strained. In such a case, with the present anatomical knowledge, it would seem reasonable to passively still farther flex the body and throw the body farther to the side of the list to free the tip of the process, and when this is accomplished to rotate the body backward upon the side of the existing displacement. In certain cases this will undoubtedly be possible. In others it will fail, and not only fail, but very possibly at times the cauda equina may be pressed in the manipulation so that paralysis develops. Under such conditions, the operation naturally should be performed, and with the present knowledge the early relief of the nerve pressure ought to result in but little permanent harm.

The symptoms which make such a unilateral displacement plain, aside from the peculiar deformity, would be the sudden character of the onset, the great pain referred to the legs as well as the back, the tenderness directly referred to this articulation, the marked spasm of all the trunk muscles, with much less of the thigh muscles except the psoas (this is of importance in differentiating the condition from a sacro-iliac displacement, in which the spasm of the thigh muscles, especially the hamstrings, is relatively greater than the spasm of the trunk muscles), and with this the fact that the symptoms are so much increased by recumbency upon the back, the position of greatest ease being upon the side away from the displacement.

If the displacement is upon both sides, the spondylolisthesis, it may, of course, be traumatic, in which case the history with the resulting deformity ought to leave no question as to its nature, but the usual form of these bilateral displacements is of gradual development and without marked symptoms. Sensations of weakness with mild pains are the chief complaint, with the consciousness that gradually the poise or carriage of the body is changed. In such cases the sacrum is always more vertical (Figs. 3 and 4) when the person stands, and in the early stages the lumbar spine is also flat. As the fifth lumbar slides forward, the shape of the lumbar spine changes, until in the extreme it is as shown in Figs. 3 and 4. Such a condition is so gradual, and the adjustment to the condition becomes so complete, that the degree of the disability is much less than would be expected. The patient pictured in Figs. 3 and 4 was seen by the writer after the deformity had developed; and with a small belt about the hips and lower part of the body he is able with but slight inconvenience to carry on his work as a gardener.

If the patients are seen in the early stages of either the bilateral or the unilateral displacement, naturally attempts should be made to correct the condition by means of apparatus or by operation. With a large number of persons, fortunately, actual displacement of the bones has not taken place when they present themselves for treatment but the symptoms are due either to strain or weakness of the structures of the lumbo-sacral joint or to interference with the use of the part resulting from the peculiar shaped transverse processes.

If the condition is purely of joint weakness, the symptoms and treatment naturally depend upon the cause and duration. If the condition is due to a definite strain, with the common sensation of a sudden "crick in the back" (a symptom which is also common with the sacro-iliac displacements), there will be low lumbar pain, at times of much severity, and often called lumbago. The local tenderness over the lumbo-sacral joint will be definite. The spinal motions will be much limited in all directions, but as a point of importance in the differential diagnosis, the limitation of the hip motions will be slight, if any, in striking contrast to the marked hip limitation in case of sacro-iliac injury. The pain is referred partly to the back, but with this there is commonly pain and "peculiar sensations" referred to both legs. The bilateral character of the pain is of differential importance in the elimination of a sacro-iliac lesion.

In the mechanical treatment of this condition, if it be acute, such as would come from a strain or wrench, support of the strained part is the most important factor, and any form of support that steadies and limits the motion of the lumbo-sacral joint will be of benefit. In the severe cases a support as complete as a plaster of Paris jacket (fitted very low) may be needed, while in the mild cases a tight swathe fastened about the lower body is all that is necessary. Between these extremes will be found the desired support in the given case; but whatever is done for temporary relief, the treatment should not be discontinued until the poise of the body is such that there is the slightest possible tendency for strain of this part. It is obvious that a person standing as pictured in Fig. 12 must have a weakness of this joint and has a potential of trouble from which symptoms may at any time develop. Exercises, with possibly the temporary use of apparatus, should be given, and the treatment continued until the body is so used that the normal balance is possible with no strain to any one part. In correcting the poise in such a case it should always be remembered that the sacro-iliac joints are

oftentimes weak in such a case; in fact, the disturbance of poise may be due to this, and in planning the treatment this feature should be recognized.

In such an analysis it should be borne in mind that while in some cases the symptoms may be due to weakness or trouble purely at the lumbo-sacral joint, that at other times the symptoms are due to the pressure caused by the abnormally shaped transverse processes or in the joints which have formed at their points of contact upon the sacrum (Fig. 20). In these cases the symptoms are commonly pain, referred quite directly to the point of contact of the transverse process with the top of the sacrum or the wing of the ilia. The patient is usually able to put the finger directly upon the seat of the pain, and since the increased length or width of the process or the increased elevation of the superior surface of the sacrum is rarely the same upon the two sides, the pain is usually unilateral, being naturally felt upon the side of the greatest thickening. With this there is often pain extending into the leg upon the same side, this probably being due in some way to compression of the lumbo-sacral cord, either as it passes under the larger transverse process or because of the constriction produced by the lumbo-sacral ligament, which may be attached lower down in such conditions.

In such a case naturally the spinal motions will be limited, and the limitation should be that which one would expect with such an anatomical condition present. Forward bending should be free, because in this motion the transverse processes are separated. Backward bending should be limited, because in this the process should be crowded on to the sacrum. Side bending, if the condition is purely unilateral, should be limited if the bending is to the side of the thickening, but should be free in bending to the other side. The abrupt limitation in the motion when certain points are reached at once suggests some mechanical element, and is entirely unlike the gradual limitation with the constant muscle spasm invariably seen when the limitation is due to conditions of disease or inflammation. From these features alone a probable diagnosis should be possible, which should be confirmed by the radiograph.

In such a condition of peculiar formation of the transverse processes it should be remembered that while the purely local symptoms are as described, that a condition of this kind cannot exist in any marked degree without causing such a disturbance in the normal motion or function of the lower spine that strain of the lumbo-sacral articulation or of the sacro-iliac articulation results. In planning the treatment for such a condition naturally the direct and the indirect symptoms should be appreciated. For treatment one of the most important features is to see that the body is used fully erect. If the body has "settled down," as is suggested in Fig. 24, the articular processes are necessarily crowded together, and with this the transverse processes are brought nearer together. If the processes are broad or unduly long, it is obvious that conditions that could be accommodated when the body is erect would result in so much pressure when the body settled down as to demand treatment. That such conditions do exist, and also that they are by no means rare, is shown by the fact that in the week during the actual writing of this paper two patients were seen complaining of painful backs with considerable disability, in which a definite diagnosis of abnormal formation of the transverse process of the fifth with resulting pressure upon the sacrum was made and afterwards confirmed by radiograph. In both cases relief was at once obtained by using apparatus that made the fully erect position possible. In one, it is probable that with this and the proper physical training to make this poise permanent nothing more will be necessary. With the other, the shape of the process upon one side is such, and must result in such constant pressure upon the sacrum, a true joint apparently existing, that operation for the removal of a portion of this process will undoubtedly be necessary.

In conclusion, the writer wishes to make plain the facts that the lumbo-sacral articulation varies very greatly in its stability, depending upon peculiarities in the formation of the articular processes and of the transverse processes; that these peculiarities not only result in less than the normal strength of the joint, but may represent mechanical elements which not only produce strain and cause pain but may lead to such great instability that actual displacement of the bones may result, with at the same time the separation of the posterior portion of the intervertebral disk.

In such displacement, if the fifth lumbar slides forward upon the sacrum, spondylolisthesis, the condition is usually compensated for, and pressure upon the cauda equina or the nerve roots does not occur.

If the displacement be upon one side, the spine must be rotated and the articular process of the fifth is drawn into the spinal canal with such narrowing that paraplegia may result, or the crowding backward of the intervertebral disk alone may be so great as to cause similar paraplegia, but of more gradual development.

Weakness of the joints or the partial displacements may cause irritation of the nerves inside or outside of the canal and produce the bilateral leg pains often called sciatica.

## DIVERTICULITIS OF THE SIGMOID.

BY W. P. GRAVES, M.D., BOSTON.

ALTHOUGH the clinical and surgical significance of the acquired diverticula of the intestine has been only very recently recognized, anatomical knowledge of these processes has existed for many years. Sömmering, as far back as 1794, described a case of acquired diverticula of the small intestine. In 1845 Gross demonstrated and pictured diverticula in the large intestine. The condition was also described by Klebs, Alibert,

Schroeder, Sydney Jones, Astley Cooper and others. In 1896 Hanseman found, at autopsy of a man of eighty-five, four hundred diverticula occurring throughout the entire length of the intestine. These historic cases were all from autopsies and were regarded merely as anatomical curiosities. In the last translation of Nothnagel's Encyclopedia, published as recently as 1904, the following statement is made: "As these lesions [acquired diverticula] are chiefly of anatomic interest and have very little clinical significance, only a few general remarks will be made on this question."

The general recognition of the surgical importance of the subject may be said to date back less than five years. In 1906 Sampson and Gogornier published their case of obstruction from diverticulitis of the small intestine and called attention to the fact that acquired diverticula not only occurred more frequently than is supposed by pathologists, but that they are the unrecognized etiological factor in many inflammatory processes of the intestine, especially those occurring in the region of the sigmoid. In 1907, W. J. Mayo published five cases of diverticulitis of the sigmoid and at that time was able to collect only eighteen other authentic cases from the literature. Since then surgeons and pathologists have given closer attention to the subject, and the record of cases is rapidly increasing both in the operating room and in the laboratory.

Acquired diverticula are to be distinguished from so-called congenital diverticula, of which Meckel's diverticulum and the vermiform appendix are the most familiar examples. It was formerly supposed that the acquired variety results from an actual hernia of the mucous coat through the fibers of the muscles of the intestines, and the term "false diverticula" was applied to them by Cruveilher and Rokitansky to distinguish them from the so-called true diverticula, the name applied to the congenital form in which all the coats of the intestine are present. It has since been learned, however, that in the early stages of an acquired diverticulum all the coats are present, but that as it develops the muscle fibers become atrophied by pressure and disappear partially or completely. The terms "true" and "false" are, therefore, no longer to be used synonymously with congenital and acquired.

Acquired diverticula may appear at any point in the entire length of the intestine, though more commonly in the sigmoidal region. They are rarely if ever seen in the rectum. Their occurrence in the appendix itself has been noted by Kelynak, Ribbert, Edel, Fischer, Mertens and Kelly, and to these records is added another in this article. The diverticula are practically always multiple and range in number from two or three up to several hundred. In size, they rarely occur larger than a hazel nut, and many of them are microscopic. Frequently they are difficult to find, since externally they may be completely hidden in masses of fat, and when searched for from the inner side of the bowel their openings may be so small as to escape notice. For this reason probably many hundreds of cases have been undetected at autopsy, as is evidenced by the fact that in the autopsy records of many of the larger hospitals only an extremely small number have been noted, while in the records of several of the smaller hospitals where the condition has been more carefully searched for, the number of cases discovered is considerable. The diverticula are at first semiglobular in shape, but as they become larger and more distended they assume a more elongated form, usually with a constricted neck, a point which is of considerable importance in the matter of later pathological changes. Most of the diverticula of the large intestine contain feces which are retained on account of the constricted nature of the neck. The diverticula of the small intestine, on the other hand, are for the most part empty, due partly to the more fluid nature of the intestinal contents and partly to the fact that the openings are less apt to be constricted. In the small intestine the diverticula are almost invariably along the mesenteric attachment either between the leaves of the mesentery, as in Sampson's case, or just to one side, as in the case described by Klebs. In the large intestine they may occur anywhere, but more commonly they appear on some part of the free border. They are very apt to protrude into the appendices epiploicæ, and this is their commonest situation in the large intestine. Those which enter the epiploic appendages are characterized more than any others by having constricted openings. The walls of most of the more advanced specimens contain only the mucous membrane and serous coat. Some of the diverticula in the same specimen of gut may contain all the coats in their walls; others may be covered with only the longitudinal layers of muscle fibers, while others may have only the mucous and serous coats.

The etiology of these lesions has never been satisfactorily elucidated. It seems fairly evident, though not incontestably proved, that the fully developed condition is acquired and not congenital, from the fact that it has never been discovered in a child, and that it occurs in the great majority of cases after the age of fifty. The youngest case ever recorded was twenty-two (Fiedler). Klebs was the first to investigate the cause of acquired diverticula, his work being published in 1869. He studied a case where the lesions appeared only in the small intestine and found that the diverticula occurred invariably where the vessels pierced the gut, and were always closely associated with the veins. He reasoned that the presence of loose connective tissue around the vessels constitutes a *locus resisentiæ minoris* favorable to the formation of these hernial processes. This observation was confirmed by Hanseman and later by Fischer. In order to prove this, Hanseman subjected the dead gut to internal pressure and was able to produce artificial pouches which bore a certain resemblance to diverticula and in which he could demonstrate the same relation to the blood vessels as appeared in his autopsy case. He was able to accomplish this only with the gut from

elderly people. Beer repeated Hanseman's experiments but was unable to produce anything simulating pouches. Chulmsky, experimenting along the same line, found that the dead bowel, when subjected to internal pressure, always ruptured at the mesenteric border, but that the living bowel under similar pressure ruptured at the free border. Experimentation of this kind is obviously unprofitable and can prove nothing as to the real formation of these pouches. Diverticula, like practically all hernial protrusions in the body, are unquestionably the result of a slow gradual process of stretching, a condition which can in no way be compared with the result of sudden or acute force used in these experiments.

Graser, in 1898, in line with Klebs, attempted to show that the local weakening of the intestinal wall was due to an enlargement of the vessel holes into the intestine as a result of a chronic passive congestion, the case which he reported having died of chronic heart disease. He examined the intestines of a number of cases where there had been mesenteric venous stagnation and in a certain percentage of them discovered microscopic diverticula situated always at the vessel openings. These observations of Graser, Klebs and others, though sufficiently convincing as regards the diverticula which occur near the mesenteric border, do not, however, account for those which appear on the free border of the large intestine where the wall is not pierced by vessels. In the large intestine the more common situation for diverticula, as has been pointed out, is into the epiploic appendages. Bland Sutton has shown that the fat of these appendages is directly continuous with the fat of the subserosa, and, therefore, naturally constitutes a point of lessened resistance especially favorable for the extrusion of a diverticulum. A study of the clinical cases reported so far shows that the great majority have been more or less obese and that the intestine is covered with an abnormal amount of fat. This was strikingly so in Case 1 reported in this article, where the patient, though not particularly obese, exhibited an extraordinary amount of intestinal fat. Some of the reported cases have been conspicuously lean, though many had become emaciated after being fat. The presence of abnormal fat can at best only be regarded as a factor favorable to some other underlying predisposing cause. Constipation with the resultant increased intra-intestinal pressure has been generally considered to play an important rôle in the causation of diverticula. In one series of twenty-two cases reported, seventeen had constipation. This is not, however, particularly impressive, as one would expect to find a large percentage of elderly people constipated, while the comparative rarity of diverticula is out of all proportion.

Beer, in an excellent article published in 1904, points out that the underlying cause of the formation of diverticula must be a muscular deficiency in the wall of the gut. He writes, "The fact that diverticula occur in old people and people whose intestines have been more or less worked out, as is evidenced by constipation, points to a muscular deficiency, and in this muscular weakness the cause of the formation of the false diverticula must be solved." Such an explanation, somewhat vague though it is, and to a certain extent evading the question, is more satisfactory than any other. Given this constitutional local muscular deficiency, the protrusions would be most likely to occur at the points of less resistance, namely, at the vessel holes of the gut or at the attachments of the epiploic appendages. Old age and the accumulation of fat on the intestines would also be a favoring factor in connection with a constitutional local muscular deficiency. If the intra-intestinal pressure constitutes the pulsion which ultimately pushes out these diverticula, chronic constipation and habitual gas formation would naturally encourage the condition. It is to be expected, too, that the sigmoid flexure would be a particularly favorable situation for the lesions, for, being a reservoir for feces, and, excepting during defecation having a reverse peristalsis, it is here that any anatomical results from constipation would most likely be felt. In addition to this, the walls of the sigmoid are naturally inclined to sacculation and are more likely to be loaded with a covering of fat than any other portion of the bowel.

The question then arises, What is the cause of this local muscular deficiency? If, as Beer says, "it is due to a wearing out of the bowel by old age and constipation," why does it not appear more frequently, and why does it appear in fairly robust persons not greatly advanced in years and who have never suffered from constipation? I am inclined to regard the underlying cause as a germinal variation or hereditary predisposition. In many cases the occurrence of hernias in other parts of the body is due to a constitutional predisposition, and that this is often hereditary has been shown convincingly by genealogical statistics. In the case of a lesion so little observed as diverticula formation in the intestine, there is, of course, no statistical evidence that the element of heredity plays any part, nevertheless it is perfectly reasonable to suppose by analogy that the predisposition is germinal in nature. It has been shown that the more recently acquired organs are correspondingly more susceptible to germinal variations. One would, therefore, on the hypothesis that the predisposition to diverticula is a germinal variation, expect to find its occurrence commonest in the sigmoid, which, being derived embryologically from the hindgut, is the most recently inherited portion of the intestinal tract.

The early investigators differed as to whether diverticula were formed by traction from without or by pulsion from within. Certain forms of diverticula are caused obviously by the traction of tumors or adhesions, but these do not come within the scope of this paper. It is conceivable that the diverticula of the small intestine may be caused by traction. The tremendous tractile force which the mesentery of the small intestine exerts on the gut during great distention is suffi-

ciently familiar to surgeons. The diverticula in the free border in the large gut, on the other hand, can be formed in no other way than by pulsion. Apparently the amount of pulsion necessary to produce diverticula does not need to be extraordinary. Given the predisposing factor of innate local muscular deficiency, the ordinary pulsion that normally exists in the bowel is sufficient to bring about the result. This is illustrated by Case 1 reported in this article, where the patient had always enjoyed excellent digestion and had all her life been unusally free from constipation or abnormal gas formation. An analogous instance is the gradual development of femoral or inguinal hernias in individuals who have never been subjected to strains, and who on account of an inborn local tissue deficiency are subject to the formation of hernias from ordinary intra-abdominal pressure.

A sufficient number of cases has been now collected from the operating room and from the pathological laboratory to show evidence that probably most people having diverticula suffer no harm from them. Diverticula of the small intestine appear to be almost without danger. Sampson's case where a thickening and kinking of the mesentery beneath the diverticula caused an obstruction of the bowel is the only recorded instance where this lesion occurring in the small intestine has given rise to symptoms. In all other cases where symptoms have arisen, the diverticula have been situated in the large intestine and usually in the region of the sigmoid. The reason for this is that the diverticula of the small intestine, unlike those of the large intestine, do not harbor feces, partly because of the more fluid nature of the fecal contents, and partly because the openings are less likely to be constricted, as has already been noted. In addition to this, Sampson points out that a diverticulum lying protected by the side of or between the leaves of the mesentery is less likely to become inflamed than one lying loose upon the free border of the intestine.

The mode of infection of diverticula is obvious, being similar to that of appendicitis. The diverticulum, at first microscopic, becomes gradually pushed out into a pouch with a constricted opening. This pouch becomes a receptacle for feces which are not evacuated on account of the constriction. The fecal contents, decomposing and hardened, become a nidus for various bacterial flora, and the concretion thus formed, irritating and ulcerating the mucous lining of the diverticulum, spreads infection by the lymphatics to the neighboring wall of the gut and to the peritoneum, or else actually perforates the wall of the diverticulum and causes a local abscess. Such an abscess may develop into a general peritonitis, or it may adhere to some hollow organ, more often the bladder, and discharge into it, and cause a fistula; or the abscess mass may absorb spontaneously. Heine has collected eight cases of enterovesical fistulæ which were proved to result from the adhesion of a suppurating diverticulitis to the bladder. Undoubtedly many of the cases of gas and feces in the bladder have a similar origin. Hochenegge and Griffin have described cases where carcinomata have developed from diverticula.

The symptoms of acute diverticulitis are pain in the left side, with the formation of an inflammatory mass which can sometimes be felt through the left flank. In my case it was felt in the posterior cul-de-sac slightly to the left. Comparing this case with others, it seems to be fairly common to find the mass situated there in women. In my case the sigmoid was abnormally long. Whether this is a frequent occurrence does not appear in the literature, no note having been made of it, but it would be interesting to know if this anatomical feature has any pathological significance. One would expect with such a long freely movable sigmoid a greater tendency to mechanical impairment of the circulation and a greater consequent danger of an inflammatory process if diverticula be present.

In making the diagnosis of diverticulitis, it should be remembered that although the disease is more common than has been supposed, it is nevertheless comparatively rare, and every left-sided pain is not to be regarded as diverticulitis. As a matter of fact, the inflammations of the sigmoid are not yet thoroughly understood. The inflammatory tumors described by Braun and more recently by Myer which exhibit a general fusiform and local swelling about the gut somewhat resembling diverticulitis appear to have a mysterious origin and one is at a loss to account for the chronic adhesions about the sigmoid occasionally seen during pelvic operations where origin from a salpingitis may be ruled out.

Although the symptoms of diverticulitis resemble left-sided appendicitis, the treatment is considerably more complicated. If an abscess is present, it must be drained through the abdominal wall, in which case a fecal fistula usually ensues, which has much less tendency to heal spontaneously than corresponding fistulas that may follow acute appendicitis. It then becomes necessary later to resect the bowel in order to close the fistula. In case the inflammatory process has not gone too far, Dr. W. J. Mayo recommends resection of the bowel at the first operation, which may result in primary union and a rapid convalesdence. Dr. Mayo describes several cases which presented the symptoms of left-sided pain and an inflammatory mass which subsided without operation and without recurrence. These cases he regarded as probable instances of acute diverticulitis with spontaneous cure. The possibility of a spontaneous cure should, therefore, always be born in mind.

The following cases are presented as a contribution to the rapidly increasing number of reports that are being made of the condition of diverticulitis. Case 1 occurred in my own practice. The other cases with the exception of Case 12 were furnished by the courtesy of Dr. D. F. Jones, Dr. J. T. Bottomley, Dr. Maurice H. Richardson, Dr. C. A. Porter and Dr. F. B. Lund. I am especially indebted to Dr. C. A. Porter for the rare

case of carcinoma associated with diverticulitis. This case, so far as I can learn, is only the fourth of its kind that has been reported, and will later be described in fuller detail by Dr. Porter with a discussion of the relationship of carcinoma to diverticulitis.

CASE 1. Mrs. F., seen in consultation with Dr. W. L. Richardson and Dr. H. T. Swain. Patient had suffered from deep left-sided pain for about a week; pain was increasing in severity, temperature 100°. Abdominal examination showed some tenderness on deep pressure in the left pelvic region. Vaginal examination disclosed tender mass behind the uterus and extending to the left.

*Diagnosis.* — Probable pelvic abscess. Patient, a large, well-nourished woman with considerable but not excessive fat, had had pneumonia one and one-half years previous to examination, and since then had dieted for diabetes. At the time of the operation patient's urine contained 4% of sugar.

Operation, April, 1909, Trendelenburg position, median incision. Intra-abdominal fat found to be excessive, and the large intestine completely incased in fat. A rounded mass felt in the posterior cul-de-sac adherent to the posterior wall of the uterus. On freeing the adhesions this mass was found to involve a much elongated loop of the sigmoid which was completely free and the mass brought through the wound for inspection. On freeing away the fat which surrounded the mass, it was found to consist of a necrotic, purulent, granulating tissue at the base of which was a circular opening into the intestine. The opening was on the free border. In the neighborhood of the necrotic area were two small diverticula which, though involved in the adhesions, were not themselves actively inflamed. No other diverticula could be detected in the length of the sigmoid, although the thick investment of fat might easily have concealed them if small and not inflamed. The two small diverticula were tied off and as much of the necrotic granulating tissue cleaned away as possible. A loop of intestine was attached near the edge of the abdominal wound by a catgut stitch and a Penrose drain left in. Patient did well for four days, when a fecal fistula became established and at the same time a deep infection in the abdominal wall to the left of the fistula. The fistula became a large one, and for a time discharged all the contents of the bowels. Later this fistula partially closed, but not completely. Sugar disappeared from the urine three days after the operation and did not appear again until nine months after, when it again made itself evident, and at the same time the fistula, which had never completely closed, became more patent and the patient's general condition began to depreciate. The second operation was performed by Dr. Charles H. Mayo in March, 1910. The old incision was reopened and the numerous adhesions about the intestine freed. Two small diverticula were found in the same location as at the first operation. A second diverticulum about two inches long, which had not been palpable at the first operation, was found at a point near the rectum in a process of active inflammation. This diverticulum was removed. The portion of the bowel which contained the fistula and the two small diverticula was then resected and an end-to-end anastomosis performed, a large rubber tube being left in the intestinal canal. The upper end of this tube was sewed to the proximal segment of the bowel and the tube then drawn down so as to invaginate the bowel in the manner of an intussusception at the level of the anastomosis, according to the method devised by Dr. W. J. Mayo and described in the *Annals of Surgery*, February, 1910. The patient recovered well from this difficult operation, but the fistula became again re-established and has not to the present date completely healed. In October, 1910, the patient developed a cystitis and was conscious of passing gas through the urethra. The cystitis has yielded to treatment and no fecal material has ever been discovered in the contents of the bladder. Sugar disappeared from the urine for several months after the second operation. The presence of sugar in this case has been a serious handicap to the patient, and its disappearance for several months after each operation is a matter of speculation.

CASE 2. Contributed by Dr. J. T. Bottomley. Transcribed from the records of the Carney Hospital.

C., age forty-five. Diagnosis: Sigmoiditis, diverticulitis. Operation: Resection of sigmoid; end-to-end anastomosis, June 20, 1909. Incision slightly to right of median line below umbilicus. Abdomen very fat. About middle of pelvis was a hard, smooth mass size of a tennis ball. Mass was adherent to the sigmoid and to the bladder by rather free adhesions. These were broken. About four inches of the sigmoid with the mesentery (including the mass) resected with the end of the arm and sutured into side of lower arm (the end of which was crushed and turned in a clamp which was on upper arm). One could not be used on lower arm. The mass was about fifteen inches from anus. The tabs on the sigmoid were very numerous and very large and were freely removed before the anastomosis was attempted. Layer suture of abdominal wall. Rubber tube with gauze brought out the lower end of incision. The lumen of the intestines were absolutely unobstructed. A small opening slightly larger than a probe led into mass. Mass not opened. Specimen sent to Harvard Medical School.

June 27. Patient suffers from gas pains. Abdomen considerably distended. Wound discharging a small amount of fecal material.

June 30. Wound discharging fecal material freely. Incision clean.

July 2. Temperature 100°. Wound discharging fecal material freely.

July 7. Complains of tenderness on pressure about four inches to left of incision.

July 9. Tenderness present. Fecal fistula discharging freely.

July 12. Under ethyl chloride anesthetic a small incision was made over point of tenderness and about ℥ss of foul discharge evacuated. A small split rubber tube placed.

July 15. Fecal fistula discharging freely. Small amount of discharge from second incision.

July 19. Clean edges drawn together with adhesive strips. Fecal discharge cleaning up.

July 22. Fecal discharge very slight. Wound on left all filled in with healthy granulations.

July 25. No fecal discharge present for forty-eight hours. Small amount of sero-purulent material expressed from fistula.

July 28. Small amount of sero-purulent discharge coming from fistula. No fecal material.

Aug. 1. Small amount sero-purulent discharge from wound.

Aug. 3. Small amount discharge from wound.

Aug. 5. Almost no discharge.

Aug. 8. No discharge.

Aug. 10. Wound apparently solidly healed. Discharged. Relieved.

CASE 3. Contributed by Dr. D. F. Jones.

W. B. H., age sixty-nine, married, seen on Aug. 20, 1910.

*Family history.* — Negative.

*Past history.* — Has had partial prolapse of uterus since birth of last child, thirty-five years ago. For a number of years has had tenderness about the lower abdomen and inability to walk without discomfort. Hypertrophic arthritis.

*Present illness.* — For nearly a year patient has complained of increased tenderness in the lower abdomen, especially on the left side, where it seems to be very sensitive. This pain on the left is markedly increased by walking, but she is able to ride in an automobile without any discomfort. No urinary symptoms. Bowels absolutely regular without medicine. Digestion good. Appetite good. No loss of weight.

*Physical examination.* — Well developed and fat woman with large abdomen. By vagina a mass high up in the left posterior cul-de-sac, which feels hard and lobulated, can be felt. This mass is somewhat tender. Perineum torn. Some bulging of the anterior vaginal wall. Cervix comes down easily into the introitus. Abdomen negative. Heart, soft systolic murmur. Urine, normal. Operation, Aug. 23, 1910. Median incision. The intra-abdominal fat much increased. On the left side of the pelvis a hard mass, firmly adherent to the posterior and left wall of the pelvis, can be felt. This mass proved to be about the lower end of the middle third of the sigmoid. This adherent mass was separated and brought into the wound. Extending along about four inches of the sigmoid on the mesenteric side could be seen numerous small rounded masses. Pressure upon some of these masses showed them to be soft, and one could almost invert them into the bowel. The appendices epiploicæ and the fat of the mesentery were hardened and covered with adhesions in this area. The wall of the bowel seemed a little thickened except for the mesenteric border, and the lumen only slightly narrowed. As none of the diverticula seemed to be perforated or inflamed, it was considered safer for the patient to bring the mass forward to the anterior abdominal wall without doing any more extensive operation. Convalescence was uninterrupted.

Case 4. Contributed by Dr. C. A. Porter. Transcribed from a personal letter.

Charles S. B., formerly a patient of Dr. Henry Jackson.

Patient was a well-nourished and developed man of seventy-two, rather sedentary habits with pretty well-marked arteriosclerosis for several years.

Operation, July 28, 1909. For the past three years patient has had increasing constipation, for which he had to take Kutnow's powder every morning. He would have three or four loose movements, and from time to time, when questioned after the operation, recalled having passed small fecal nubs about the size of sheep's dung. He noticed at times that there was rather a bad odor to the dejections. He had tried taking injections, but found that the rectum tended at once to expel fluid, if put in at all rapidly in excess of a pint and a half. Dr. Jackson told me that, during the winter of 1909, he had felt a mass in the left lower quadrant, which he thought was in or adherent to the abdominal wall. In view of the patient's age, and the probability that it was malignant, he did not believe in any operation so long as the bowels acted sufficiently well.

I saw the case in consultation with Dr. Percy Musgrave at Bass Rocks on July 27. At this time patient was slightly nauseated; had had no movement of the bowel for two days; was obviously obstructed by a growth which seemed to me situated in the sigmoid flexure, and was probably carcinoma. I operated through the left rectus. On opening the abdomen, I found a very large indurated mass with extraordinarily big appendices epiploices. This mass was adherent to the anterior abdominal wall, just to the inner side of the left anterior spine, where infection had occurred and yellowish fibrin with a small amount of pus lay between the gut and what had been the peritoneum. Over this point there was distinct tenderness at the time of operation, but, if I recall correctly, the patient had no fever. Near the pelvic brim there was a constricted area which felt like carcinoma, and above this for a distance of six or eight inches there was well-marked diverticulitis. In some of the cavities, hardened fecal masses could be felt. I resected about ten inches of the intestine, bringing up the distal end of the bowel to the lower end of the wound, and the lower part of the proximal bowel to the upper part. I was unable to remove all of the diverticuli, which extended up almost to the splenic flexure. The artificial anus worked very well, and the patient in spite of age made an uninterrupted convalescence. From time to time he has had slight discharges of pus from anus, as if the diverticula remaining in the lower portion of the bowel became occasionally infected. An end-to-end suture was considered, but, owing to the conditions present, was advised against.

CARCINOMA ASSOCIATED WITH DIVERTICULITIS.

Case 5. Contributed by Dr. C. A. Porter.

A. A., aged fifty-six years, patient of Dr. Maxwell, of Grafton, Mass.

*Present illness.* — For years has suffered from indigestion, constipation and for the last two or three years, a great deal of depression with suicidal tendency. As he looks back at it, he first noticed symptoms of increasing obstruction about a year ago, with small, tape-like stools and excess of mucus. In the past four months, there have been two attacks accompanied by distention, peristaltic pain, nausea and vomiting, which passed off with loose dejections. For two months there has been some blood and mucus in the stools. The pain has been across lower abdomen, and also low down in the sacral region behind; the latter pain was more or less steady and the former colicky, and, with any tendency to obstruction, very severe. He had been examined a few weeks ago by a doctor, who said there was a growth in the rectum. He has lost about ten pounds in weight during the last year, due, he thinks, to the fact that he has regulated his diet in order to avoid attacks.

*Physical examination.* — Mild mannered, depressed man; logy, fat and flabby. Heart and lungs negative. Urine negative. Abdominal examination shows nothing abnormal; no peristalsis can be made out; slight tenderness in the right iliac fossa, low down. By rectum, there is a distinct, indurated mass which will not admit finger tip; it is felt from three and a half to four inches from the anus. This seems to be slightly mobile from side to side; blood follows examination. Examination of stools shows large amount of mucus and blood. No hemorrhoids present.

After long discussion, patient consented to an operation, and to leave to my judgment what should be done.

Operation at 38 Newbury Street, Sept. 17, 1908. Drs. Whitney, Maxwell and Clapp present, the last two of Grafton, Mass.

Under ether, the mass is felt as before described with greater distinctness. Bimanual examination, pressing down from above, shows mass to be slightly mobile from above downwards and from side to side. A few glands can be felt on the side of pelvis. Considerable

bleeding was a result of examination and following curetting of a portion, which Dr. Whitney examined at once and reported to be adenocarcinoma. For some reason, patient collapsed, and it seemed for a few moments as if no further operation could be done. Under strychnia he improved slightly, and I decided to do a rapid colostomy. Incision made along inner border of left rectus, five inches long. On examination, the appendices epiploices were very large and fat; sigmoid elongated and filled everywhere with various sized diverticula, many of them projecting under mesenteric attachment, some into base of appendices and others free on the surface of the bowel. Some of them contained hard enteroliths. There were evidences of past infection, shown by adhesions about the rectum in the pelvis. The subperitoneal fat was unusually developed everywhere. Just above the pelvic part of the rectum, in the peritoneal cavity, could be felt a mass about the size of a small lemon, which was movable with one or two glands on either side. It seemed unwise to perform a colostomy in the midst of diverticulitis, so sigmoid and lower part of descending colon were freed, above which point the diverticula were very infrequent. A suture was placed about bowel, which was then cut and disinfected with carbolic acid. The proximal end was carefully sutured to the peritoneum, and, owing to patient's condition, it seemed at first unwise to do anything more, but he gradually improved and I decided to complete operation at this sitting. The vessels going to the sigmoid were, therefore, tied to abdominal incision, and the sigmoid and rectum cut loose from the peritoneum and the glands and mesorectum were scooped out from the pelvis. The abdominal wound was then carefully sutured above emerging bowel, and distal end dropped into pelvis. Patient was then placed in lithotomy position, and incision made above anus, removing the sphincter muscles. There was considerable bleeding, which was tied with catgut, then the whole rectum was removed by blunt dissection, scooping it out from the pelvis, and after this maneuver, bleeding was surprisingly slight. Cavity left was packed with two large handkerchiefs of gauze.

*Convalescence.* — Patient went to bed in good condition; pulse 120. No explanation made of peculiar failure in the beginning of etherization. In afternoon, patient began to recover from the ether, and vomited tarry blood. This weakened him very much and lasted for about fourteen hours; no diagnosis as to the cause could be made. It would seem possible that a hemorrhage into the stomach had taken place and caused collapse before mentioned. On the following day, vomiting had ceased, since which time patient has made a normal convalescence. Frequent movements of bowels show some tarry material. Dressing has not been changed, but, on Sept. 22, is beginning to show some signs of decomposition. Temperature at no time was over 100, and has gradually dropped to an average of 95.

Examination of tissue by Dr. W. F. Whitney: Specimen consists of about 25 cm. of the lower end of the rectum with the anus. About 19 cm. above the anus was a circular infiltrating and ulcerated new growth about 3 cm. in greatest diameter, with slightly raised and thickened edges.

Microscopic examination of a portion of the base showed an irregular growth of tubular gland tissue infiltrating in the submucous tissue. Diagnosis: Adenocarcinoma.

Above this there were numerous small tube-like diverticula from the wall of the gut into the fat tissue. Diagnosis: Chronic diverticulitis.

CASE 6. Contributed by Dr. F. B. Lund.

J. H. G., physician, age fifty-two years. Had suffered for about two weeks from abdominal pain, especially on movement of the bowels. His temperature was about 100° in the evenings, normal in the mornings. The urine was normal, stools did not contain blood. Extensive hemorrhoids were present. He had been constipated for a long time, but had never had diarrhea. No loss of weight. Tender sausage-shaped mass could be felt in the left iliac region. Diagnosis lay between an inflamed malignant growth and diverticulitis. Operation, April 13, 1908. An indurated malignant-looking mass occupied about three inches of the sigmoid. The induration extended into the mesosigmoid. About four inches of the sigmoid with the mesosigmoid were resected and an end-to-end suture done with one layer of Connell sutures of catgut surrounded by a Cushing suture of linen thread. Abdomen closed without drainage. The specimen removed was very much indurated and thickened and greatly resembled malignant disease. It was carefully examined and sectioned by Dr. Mallory, and drawings made of the diverticulum extending down through the walls of the bowel into the mesentery. Microscopical examination showed no evidence of malignant disease. The patient made an uneventful recovery and has since been well and actively engaged in the practice of his profession.

CASE 7. Contributed by Dr. F. B. Lund.

Mrs. M., age sixty-two years. Seen in consultation with Drs. J. F. Welch, of Quincy, and F. W. White, of Boston, in 1907. Had suffered for five years with attacks of abdominal pain said to have been inflammation of the appendix. A year and a half ago began to pass bloody mucus in the stools intermittently. One year ago passed a great deal of mucus for a few days. Her attacks of pain were attended by a desire to have a stool. For the last few months she had noticed that her stools were bloody and ribbon-like. She had to take cathartics constantly. After a thorough clearing out she would pass dark clots and bloody mucus. Examination showed that she was large and stout, weighed 199 lb. The prominent abdomen was slightly tender over the pelvis. No definite mass could be felt. Rectal examination was negative except for old internal piles. Examination with proctoscope showed nothing for a distance of two inches. Stools were of normal color and consistency, but of small caliber and contained mucus, blood and pus. The blood was found on a meat-free diet. Careful regulation of the bowels and careful diet failed to relieve her symptoms, and after about three months of medical treatment she still suffered from attacks of severe colic and passed mucus and bloody stools. In one of the attacks she had a slight temperature. Vaginal examination showed nothing abnormal to be felt by rectum. Diagnosis lay between colitis, diverticulitis and carcinoma. Operated on Nov. 11, 1907. Median exploratory incision showed a mass in Douglas's cul-de-sac covered with tags of fat which were indurated at the adhesions, which indicated old peritonitis. The uterus was atrophied and had a small fibroid in the fundus. There were no adhesions to the uterus or the ovaries. All the adhesions were between the lower part of the sigmoid and the posterior pelvic wall. In the middle of the fatty mass was a small indurated area which was incised, feces escaping. A probe entering the opening ran downward into the bowel. The diverticulum, for such it was, was wiped out, and inasmuch as the opening in it was too friable to hold sutures, it was closed over by sewing the tags of fat which covered it across the opening. The operation was difficult on account of the obesity of the patient, the amount of fat in the mesentery and the depth of

the pelvis. The pelvis was thoroughly washed out and three iodoform gauze strips were carried down to and around the opening. She recovered from the operation about as was expected and has since continued to suffer from attacks of pain and partial obstruction. It seems to me that the only way to relieve her safely would be to make an artificial anus, but this she does not desire to have done. She sometimes requires morphia for the pain and has constantly to depend on cathartics for any degree of comfort.

Case 8. Contributed by Dr. Maurice H. Richardson.

Mr. H., fifty-two years. Patient of Dr. Holmes, Minneapolis. History taken March 14, 1910. No serious illness or injury except a broken ankle. Travels all the time. Five or six years ago began to have attacks of fever, sudden. Temperature, 104°–105°. Different treatments. One year and a half ago began to have very severe pain in bladder. Sat up all night to strain a drop of urine. The urine was dark colored, with a deposit of white pus. Treatment by Dr. B., of Chicago, for two months, washouts and uroseptin. Said in four weeks he would be well, but was worse. Question of stone in kidney arose. With uroseptin, no fever. Stopped traveling on that account. Went to Dr. Cabot. He was away and he went to Dr. Binney. Same treatment as in Chicago. X-ray by Dr. Dodd showed no stone. Has had cystoscopy. Guinea-pig test showed no tuberculosis. In addition to pus, black specks and chunks of feces. By cystoscope Dr. Binney found an opening in bladder. Dr. Binney said, no use in treatment — operate. No history of appendicitis. During these last two years testicle has swelled up a half dozen times. Gets up at night four times.

Examination of urine, March, 1910: Normal, cloudy, acid, 1015, slight trace of albumen, no sugar, many pus and blood cells, occasional small round cell, rare hyaline cast.

Cystoscopic examination by Dr. Chute showed a puckered scar in upper part of bladder with a drop of pus exuding from it.

*Operation.* — Median incision above symphysis five inches long. Rectum at its upper part found adherent to bladder. At this point there was an inflammatory mass thickening the whole rectal wall. This mass was firmly adherent to the bladder by old adhesions. The adhesions were separated and the rectum was slowly dissected away from the bladder. A small abscess cavity was found in the center of the mass which contained about two drams of pus. Leading into this cavity were two perforations of rectum about one-fourth inch in diameter, and one small perforation into bladder. The rectal wall throughout its circumference was thickened, hard and infiltrated. The perforations into the rectum were lined with mucous membrane and resembled diverticula. The case seemed probably an abscess from infection of diverticulum with rupture into the bladder. The appendix was negative. The perforations in the rectum were closed with chromicized catgut with some difficulty, owing to the hard rectal wall, which could not be folded. The fat of the epiploic appendages was sutured over them. The perforation into the bladder was closed with chromicized catgut and the peritoneum as far as possible sutured over it. Cigarette wicks were placed to the rectal perforations. Wound partly closed with chromicized catgut and through-and-through of silkworm gut. Patient put on constant drainage through urethra.

After operation the patient did well. There was a small amount of fecal discharge through abdominal wound after removal of wicks about the eighth day. Patient discharged on thirty-first day, with clear urine and a small abdominal sinus which discharged occasionally a small amount of fecal matter. This sinus persisted about the same through May and June. During July there began to be evidence of escape of fecal matter into the bladder. There was the occasional passage of gas by the urethra, with attacks of cloudy urine, and fever. Particles of fecal matter were found in the urinary sediment. The abdominal sinus persisted with a daily small amount of fecal discharge, just enough to stain the gauze slightly.

Second operation, Aug. 19, 1910, Corey Hill Hospital. Median incision through the old scar. Sinus followed down by dissection. Bladder adherent to rectum. Old adhesions of intestines in pelvis. Adhesions separated. Probe passed readily through small sinus into bladder, indurated bladder wall resected, leaving one-inch opening. This was closed with continuous chromicized catgut to mucous membrane, and interrupted chromicized catgut to bladder wall. A sinus was found extending into rectum. Below this point the rectum was surrounded by considerable indurated tissue, forming a moderate stricture. This inflammatory tissue was dissected away from the rectal wall, and all the indurated tissue around the sinus was resected. In doing this a non-inflamed diverticulum about one-eighth inch in diameter and one-half inch long was cut across. An opening about one and one-half inch in diameter was thus made in the rectum. This was closed by continuous chromicized, covered with chromicized catgut Lembert sutures. Two cigarette wicks. Wound closed with silkworm gut through and through. Chromicized catgut to fascia.

Suprapubic cystotomy wound made, and rubber tube stitched in bladder.

The patient's general condition was good after the operation. There was some temperature. The wicks were removed on the sixth day and rubber dam replaced. On the twelfth day there was fecal discharge through the wound.

On the fourteenth day in the evening there was sudden severe pain in the left side of abdomen, with persistent vomiting. The patient's condition became bad. There was evidently a peritonitis. On the morning of the fifteenth day the abdomen was rapidly opened again for drainage.

Microscopical report: Chronic inflammation. (Dr. W. F. Whitney.)

Third operation, Sept. 3, 1910. Incision along outer border of left rectus muscle. Much pus found. Source not made out. Two large gauze wicks. Similar incision on right side. Thinner pus found. Wicks placed toward pelvis. Wound not sutured.

The source of the peritonitis was not made out at operation. It obviously arose from the pelvis. No search was made for the cause. The abdominal cavity was drained as rapidly as possible. The patient failed steadily and died thirty hours later.

Case 9. Contributed by Dr. Maurice H. Richardson.

Mr. W., seventy years, patient of Dr. N. J. Davis, Somerville. Oct. 6, 1908. Taken day before yesterday with pain in epigastrium shifting to right iliac fossa, with right-sided tenderness, rigidity without distention. Diagnosis by attending physician, "acute gangrenous appendicitis." Confirmed by Drs. M. H. and E. P. Richardson, and two other doctors present. White count, 17,000. Temperature, 100.8. Pulse, 80.

Rectal examination showed a resistant tender tumor at right pelvic brim.

Operation at Corey Hill Hospital, October, 1908. Ether by Dr. Garland.

Examination showed moderate distention, marked tenderness, with little spasm over abdomen, some on right. Marked tenderness by rectum, which was ballooned. A mass like appendix felt by rectum.

*Operation.* — Right rectus incision five inches long. Free pus in peritoneal cavity. Intestines reddened. Appendix retrocecal, running upward along outer side of cecum, thin and pale. Much pus with fecal odor in pelvis. Adherent to rectum, two inches peritoneal reflection on pelvis floor, was a reddened, indurated mass, partly gangrenous, about the size of a plum, an enlarged and inflamed epiploic appendage. Some coils of intestine were adherent to it by recent adhesions. On separating the appendage from rectum a small cavity the size of a cherry was opened. This apparently communicated with the bowel, although it was not proved to do so and was thought to be a diverticulum. The peritonitis was due to bacterial leakage through an area of gangrene. A rubber tube was inserted into the small cavity and walled around with four gauze wicks. Sutures through and through of silkworm gut and chromicised catgut.

A fecal fistula developed at about the fourth or fifth day. The patient apparently did well in spite of this for a time, but then gradually became weak and drowsy, and died on the twenty-second day after operation.

CASES PROBABLY DIVERTICULITIS BUT WITHOUT DEFINITE DIAGNOSIS.

CASE 10. Contributed by Dr. D. F. Jones.

J. I. R., teacher, forty-five years, married. Seen on June 26, 1905.

*Family history.* — Negative.

*Past history.* — An attack nine months ago, similar to the present. Relieved by dose of castor oil. Has always been constipated. About four weeks ago patient fell in a boat, coming down on the edge of the seat. Has been somewhat sore over the coccyx ever since. Has not been feeling well for some months because of indigestion and palpitation. This, however, is the usual condition at the end of the school year. Eight days ago awoke in the morning with a feeling of pressure in the region of the bladder. Since then has felt like walking in a stooping position, and has had to be careful of walking because of the jar. The night following the first symptoms he had some pain in the lower abdomen which seemed like gas pain. When the gas reached a certain point the pain would be quite severe. The pain in the bladder has diminished somewhat, but the pain above the bladder has been worse for the last two days. Yesterday took castor oil, ounce one, which caused great pain. Patient has been up and down, occasionally going to his office since this first attack of pain. Two days ago saw the doctor because of increased pain, and went to bed that night. Next day temperature was up to 100° in the morning, and gradually rose all day to 102. This morning temperature was 100.6°; to-night, 103°.

Abdomen distended and tender with some rigidity extending across the lower abdomen, perhaps slightly more low on the right just above the pubes. By rectum, ballooning was marked, with floor of pelvis tender and firm.

*Operation.* — Right rectus incision. The whole lower abdomen from umbilicus to the pubes, one mass of adhesions. On the right, close to the bladder, was a large abscess filled with foul pus. On the left was a large hard mass extending from the base of the bladder to the left iliac fossa. This mass was at least three inches in diameter, fusiform in shape, and proved to be the upper portion of the rectum. It was felt at the time that this mass must be malignant disease which had broken through into the pelvis. The pelvis was drained by two large gauze wicks.

Patient picked up slowly in general condition, and at the end of five weeks the abdominal wound had entirely closed. Since that time the patient has been in excellent condition, with the exception of two attacks of marked constipation and discomfort in the pelvis. The last examination was in May, 1910. No masses could be made out anywhere in the pelvis. His condition was excellent except for rather marked constipation.

CASE 11. Contributed by Dr. D. F. Jones.

Mr. F., fifty-three years, conductor. July 30, 1904.

For several years has had indigestion. Never had any attacks similar to the present. Bowels always slightly constipated. No diarrhea until three weeks ago, when he had an attack lasting about one day. Stools were watery and bloody. Thinks he has lost some weight, though he has not been weighed. Six days ago began to have some pain just above pubes. Went to work next day, but had to quit on account of pain. Consulted a doctor the next day, but was not relieved. Four days ago, in addition to pain, which was continuous, began to have considerable pain on defecation and micturition, and this has continued since. Bowels have moved daily with cathartics. Temperature yesterday, 100. This morning, 101. Whites, 19,000. About noon to-day, pain ceased.

July 31. Slightly obese man, nothing abnormal found in chest. Seems rather bright and restless, not apparently in pain. Abdomen not distended. Moderate tenderness over whole pelvis, no rigidity, no mass felt.

Rectal examination shows marked tenderness in both sides, no mass felt. Passed normal urine without difficulty. Temperature, 103°. Pulse, 100. Whites, 16,000.

*Operation.* — Median incision four inches long below umbilicus. On opening peritoneum intestines appeared collapsed and normal. General peritoneal cavity walled off with mass about size of hen's egg felt deep in pelvis adherent to rectum. This was brought up with some difficulty and found to be attached to sigmoid about its middle. The mass apparently consisted of appendices epiploicæ matted together about the base. This was opened and about ʒii foul fecal pus containing a small fecal concretion evacuated. Some of the tissue cut away for examination. No opening found into bowel. Wick placed to pelvis bottom. Second wick to mesentery on sigmoid, which was somewhat torn below base. Third wick to pus cavity. Wound closed about wicks with through-and-through silkworm gut. Smears made from pus showed many micrococci and colon-like bacilli.

Aug. 1. Considerable discharge.

Aug. 3. Ends of wicks cut off and picked loose. Still considerable discharge. Wicks out. Thick pus discharge.

Aug. 15. Wound granulating well. Free discharge for past week.

Aug. 22. Wound again wicked for several days.

Aug. 26. Wick gradually shortened. Less discharge.

Aug. 29. Small sinus remains.

Aug. 30. Granulating wound with small sinus from which patient feels gas escape when bowels move.

Dr. Jones has opened the scar once or twice in outpatient department. Since leaving hospital wound has opened and closed with discharge of varying amount of pus. No fecal matter observed.

From pelvis: An irregular mass 2 cm. in diameter of acutely inflamed fat in which were small hemorrhages, the outer surface of which was covered with an acute fibrinous exudate.

### DIVERTICULA OF THE APPENDIX.

Case 12. The following case does not come strictly under the subject of the paper, but is added to illustrate the occurrence of diverticula. The appendix here described was removed by me during an hysterectomy for fibroids of the uterus on Nov. 10, 1908, and is transcribed from the pathological report by Dr. H. T. Hutchins.

Vermiform appendix measures 5 cm. in length and there is a small bit of fatty mesentery attached. The proximal two thirds of the appendix is swollen. At the junction of the middle and outer one half of the appendix there spring from the wall of the appendix two nodules, one about 5 mm. in diameter. These nodules are rather dark in color, veins show prominently through the surface, are covered by a smooth and very thin peritoneum, and resemble a rupture from the vermiform appendix itself, the rupture not going through the peritoneum but having pierced the muscle and subperitoneal tissues. Distal to these nodules the vermiform appendix is very small and atrophied. On longitudinal section of the appendix the lumen of the proximal two thirds is found to be patent and contains fecal material. In the tip the lumen is closed. The two projections noted above are found to be connected with the appendix and are apparently herniæ of the appendix and are lined by a mucous membrane. Section taken of uterine wall including endometrium, myoma, cystic right ovary, left tube, cervical polyp, cross section of hernia of appendix wall, also appendix wall itself.

*Microscopical examination.*—Section near the base shows a normal appendix, normal mucous membrane thrown into folds. Section of the appendix through the herniæ shows a true hernia of the mucous membrane through the walls under the peritoneum. The muscle of the wall of the appendix grows gradually thinner and thinner until it vanishes, and over the top of the hernial body there is nothing but peritoneum and loose subperitoneal tissue covering the mucosa. There is no evidence of scar tissue in the wall of the appendix, and the appendix is otherwise normal.

### SUMMARY.

*First.* The clinical significance of the acquired diverticula of the intestine has only recently been recognized.

*Second.* The acquired diverticula of the intestine are nearly always multiple and may occur throughout the length of the intestine, though most commonly in the sigmoid flexure. The diverticula of the large intestine are of more important clinical significance than those of the small intestine.

*Third.* The etiology of the formation of diverticula in the intestine is referable probably to an inherent local muscular deficiency. The most common predisposing factor in causation is the accumulation of fat on the intestine, as is shown by the fact that the majority of diverticula of the large intestine occur at the attachment of the appendices epiploicæ.

*Fourth.* The pathology and symptomatology of diverticulitis simulate left-sided appendicitis. Some cases are cured spontaneously without operation.

*Fifth.* The operative treatment of diverticulitis consists in general of drainage in the presence of abscess or gangrene formation. In favorable cases, resection of the bowel and anastomosis is indicated.

## REPORT OF A SERIES OF CASES OF SYPHILIS TREATED BY EHRLICH'S ARSENOBENZOL AT THE WALTER REED GENERAL HOSPITAL, DISTRICT OF COLUMBIA.

BY CAPT. HAROLD W. JONES, MEDICAL CORPS, U.S.A.

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The following paper is, needless to say, a preliminary report only, and any conclusions drawn must necessarily be subject to revision as time goes on. Twenty cases only are reported, but all of these have been carefully observed and numerous Wassermann reactions have been made in each case. The writer feels that the time which has elapsed since treatment was begun in the earlier cases (three and one-half months) is all too short for many definite conclusions in the series of cases. At the outset it may be stated that the purpose of this report is not to show what arsenobenzol will accomplish in suppressing the manifestations of syphilis; this has already been shown so conclusively in so many hundreds of cases as to be mere repetition. The main purpose of the paper is to set forth what seems to me the best method of administering the drug, and to draw attention to the subject of relapses and incomplete cures. The data in regard to the cases is presented in tabular form, and for the sake of brevity the most important facts only are included, in order that the table may be readily comprehended.

### METHOD OF PREPARATION OF THE DRUG.

At first the arsenobenzol was prepared in neutral suspension after the method of Wechselmann, but this method was soon abandoned as it was found that it was not readily absorbed, remaining in the tissues for weeks and causing long-continued irritation. For injection into the tissues the capsule containing the drug was immersed in alcohol and wiped with sterile gauze, after which the neck was marked with a file and the top removed. The contents of the capsule was then emptied into a bottle of 50 ccm. capacity, sterilized, and containing a few glass beads at the bottom to assist in the solution of the drug. The bottle used was marked to show the proper level for 10 and 20 ccm. Certain varieties of arsenobenzol required to be first wet with from ½ to 1 ccm. of c.p. methyl alcohol in order to effect solution in hot water, but all that has been used of late has gone into solution quite readily by the addition of 10 to 12 ccm. of hot sterile water. Following this, for each .1 gm. of the drug, there was added about .75 ccm. of a normal (sterile) NaOH solution. This produced a flocculent precipitate which redissolved on the addition of a few more drops of the NaOH. As a rule it was found that the temptation was to add too much NaOH as almost always, if a slight precipitate remained, it would be found that this would be dissolved in five or ten minutes more, thus rendering the addition of more NaOH unnecessary. When the alkaline solution became clear it was brought up to a total bulk of 20 ccm. by the addition of sterile water, and was then

ready for injection into the muscles. Where an intravenous injection was desired, about 350 ccm. of sterile salt solution was added and the whole kept at blood heat.

### METHOD OF ADMINISTRATION.

Leaving out the subcutaneous method with the drug in neutral suspension (Wechselmann's) the arsenobenzol was given in three ways, — intravenously, intramuscularly into the buttock, and intramuscularly into the erector spinæ. The intravenous method was employed seven times in six patients. The fluid was usually about 350 to 400 ccm. in bulk and was at body heat. One of the veins at the bend of the elbow was selected, a rubber tube being wound about the upper arm to cause the vein to show plainly. The accompanying illustration shows the bottle holding the solution. The apparatus figured was devised by Captain Nichols, of the Medical Corps, and has proved very satisfactory. About seven or eight minutes was usually consumed in this method.

The first two or three doses, given by the intramuscular method in the buttock, were given near the ischial tuberosities, but since this forced the patient to use a pillow to sit on for many days, it was abandoned for what has proven a more satisfactory site, namely, a point at the upper portion of the middle third of a line drawn from the anterior superior spine of the ilium and the ischial tuberosity. The injections were always given deep, about 2¾ inches, and the fluid injected very slowly, 10 ccm. in each buttock. Seventeen doses were given, in all, in 16 patients.

Only one dose was given in the erector spinæ muscle. Twenty cubic centimeters were injected deep into the muscle. This resulted in such pain later, and it was so long before the patient could sit up or walk, that the method was at once abandoned, although the initial pain was so slight that the method was at the time regarded with favor.

### RECAPITULATION.

Two patients received one intravenous injection and nothing further; one received two intravenous injections and nothing further; two received one intravenous followed by an intramuscular; one received a subcutaneous injection followed by an intramuscular, and this in turn followed by an intravenous injection; twelve received one intramuscular only; one received two intramuscular injections. This gives a total of twenty patients treated.

### ADVANTAGES AND DISADVANTAGES OF DIFFERENT METHODS.

As has been said, the suspension (subcutaneous) method proved disappointing, practically no favorable results occurring and the hard indurated mass which formed at the site of injection persisted for months in spite of massage. The intravenous method, while accomplishing results very quickly, and having the great advantage of being nearly painless, will, nevertheless, I believe, be restricted to a certain class of cases, namely, those in which cachexia is present and in which a rapid improvement for the time being is desired or in which pain is to be avoided. The intravenous method, while comparatively simple, is at the same time not as well adapted to the needs of the general practitioner. The fact that two frank and unquestionable relapses occurred after this method had been used, in spite of the fact that practically all symptoms had disappeared, makes it appear as if the action of the drug was not long continued enough to cure the patient. At the same time, it has the theoretical advantage of bringing the entire dose of the drug into the blood-stream, which should be ideal for its satisfactory working. Two intravenous injections are probably better than one, and in the one case in which two were given relapse has not occurred as yet.

The intramuscular method causes pain, there can be no denying that; the amount of pain seems surprisingly variable; with some patients the immediate pain is bitterly complained of, with others the pain is worse after an hour or two. A few cases only required an opiate. A rise in temperature was very common, sometimes lasting as long as five days. Swelling of the buttock was usual, but no case of suppuration occurred. Nausea, vomiting and fainting were all observed in the occasional instance in the series, but no really serious or untoward event occurred.

### RESULTS ON THE LESIONS.

These were quite what might be expected, and in all frank cases with visible lesions were uniform. There were but two cases where visible lesions did not disappear, and both of these are at the present time 75% improved, and one has had his second dose so recently that the ultimate result cannot be predicted confidently.

### EFFECT ON THE WASSERMANN REACTION.

In two cases the serum was negative at the time of injection, but in both these it had been positive a short time before and both cases had had specific treatment previously. One of these (911) was interesting in having active throat lesions and a negative serum. All the other cases had positive sera. In eight cases the serum remains positive, one of these cases having had three injections, the first three and one-half months ago; a number of these, however, are now weakly positive and it may be expected that in some the reaction will become negative shortly. Two cases have become negative following an injection, only to become positive later. Nine cases are still negative, one of them having been injected three months ago. In one case only does a definite lesion persist in the presence of a negative serum.

### SHORTENING OF TIME ON SICK REPORT.

A comparison of the length of time on sick report before and after the treatment by arsenobenzol was attempted, but such a comparison is unsatisfactory and hardly necessary since it is

REPORT OF A SERIES OF CASES OF SYP

| Case No. | Age. Years of Service. | Prin... Last ... | ...k Re- Taking Da... | Subsequent History. | Previous Treatment. |
|---|---|---|---|---|---|
| 706 (Cornwell) | 22 3 | Chancr... nis, ... 1910. | ...s | Well, Feb. 1, 1911. | Mercury 4 mos. with slight improvement. Relapse. |
| 882 (Smith, Leroy) | 24 3 | Chancr... nis, J... 1910. | ...s | Left the service. No further history. | Gray powder 3 weeks with no effect. |
| 881 (Randall) | 29 4 | Chancr... nis, ... 1910. | below | Relapse, partial. Gained 14 lb. | Mercury in all forms 5 mos. No improv't. |
| Do. | Do. | Do. | ...days ...k rep't. | Well, Feb. 1, 1911. Gaining weight, but relapse not unlikely. | Do. |
| 870 (Sinerly) | 27 6 | Chancr... nis, ... 1910. | below | Complete relapse in 15 days. | Mercury in all forms 5 mos. with temporary improvement. |
| Do. | Do. | Do. | ...days | Well, Feb. 1, 1911. | Do. |
| 911 (Brown, C.L.R.) | 29 3 | Chancr... nis, ... 1910. | below | Second dose "606" given. | Specific treatment, but duration uncertain. |
| Do. | Do. | Do. | ... | Well, Feb. 1, 1911. | See column above. |
| 809 (Davis) | 26 3 | Unkno... | ...s | Well, Feb. 1, 1911. | None. |
| 930 (Waite) | 22 1 | Chancr... nis, ... 1910. | below | Failure. | Mercury in all forms 2½ mos. without result. |
| Do. | Do. | Do. | ...days | Given a third dose | See column above. |

## Results in Tabular Form of the Administration of Arsenobenzol ("606") in Syphilis in the United States Army.

(From a series of cases treated at the Walter Reed General Hospital, Takoma Park, D. C.)

| Case No. | Age. Years of Service. | Primary Lesion. Date. | Secondaries. Late Lesions. Date. | Condition at Time of Injection of "606." | Date of Injection. Dosage. Method. | Immediate Results. | Later Results. | Result at Discharge. | Wassermann Reactions. | Time on Sick Report Previous to "606." | Time on Sick Report after "606." | Subsequent History. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 706 (Cornwell) | 22 3 | Chancre penis, Aug. 1, 1910. | Enlarged tonsils, mucous patches. Sept., 1910. | Mucous patches, tongue. Facial syphilide. Serum +. | Dec. 30, 1910. .4 gm. Intravenous. | None. | Lesions healed in 7 days. | Apparently well. Duty Jan. 11, 1911. | Aug. 10, 1910, + Nov. 22, 1910, + Dec. 13, 1910, + Jan. 6, 1911, + Jan. 23, 1911, + | 4 mos. 20 days | 11 days | Well, Feb. 1, 1911. | Reaction 4 hours after intravenous injection. |
| 882 (Smith, Leroy) | 24 3 | Chancre penis, July 15, 1910. | Pustular eruption, condylomata. | Pustular eruption. Anal condylomata. Serum + + (Dec. 8). | Dec. 13, 1910. .55 gm. Intravenous. | Rise in temperature 100° (1 day). | Lesions healed in 9 days. | Apparently well. Duty Dec. 23, 1910. | Dec. 8, + + Dec. 22, + + Dec. 27, + Jan. 6, + — | 5 days | 15 days | Well, but carries [illegible] Wassermann history. | Syphilis [illegible] |
| 881 (Randall) | 29 4 | Chancre penis, Jan. 4, 1910. | Papular eruption. June 20, 1910. | Cachectic, loss of 20 lb. weight, bedridden, arthritis knees and ankles. Rupial facial eruption. Serum + (June 22). | Dec. 9, 1910. .4 gm. Intravenous. | Rise in temperature 102° (2 days). | Improvement 48 hours. Able to walk in 7 days. | Not discharged. | Dec. 15, 1910, — Jan. 6, 1911, + Jan. 12, 1911, + — | 4 mos. | [illegible] | [illegible] | [illegible] |
| Do. | Do. | Do. | Do. | Arthritis left ankle. Relapse after "606" in 4 weeks. | Jan. 10, 1911. .45 gm. Intravenous. | Rise in temperature 101° (1 day), restless. | Pain and swelling gone from ankle 5 days. | Still in hospital under observation. | Jan. 10, + Jan. 12, + — | See columns above | 1 mo. 22 days until ad. obs. | Well, Feb. 1, 1911. | [illegible] |
| 870 (Simerly) | 27 6 | Chancre penis, Oct. 9, 1909. | Eruption, adenopathy, sore throat. March 4, 1910. | Very severe ulceration of fauces and uvula. Serum +. | Nov. 29, 1910. .5 gm. Intravenous. | Slight dizziness. | Lesions 50% improved in 48 hours, 90% in 10 days. | Not discharged. | Nov. 24, + + Dec. 5, + — Dec. 16, — | 3 mos. 23 days | [illegible] | [illegible] | [illegible] |
| Do. | Do. | Do. | Do. | Do. Complete relapse. | Dec. 22, 1910. .6 gm. Intramuscular. Buttock. | Rise in temperature. Moderate pain. Diarrhea 3 days. | Lesions 75% improved 6 days, healed 12 days. | Apparently well. Duty Jan. 7, 1911. | Jan. 6, 1911, + | See columns above | 1 mo. 9 d[illegible] | Well, Feb. 1, 1911. | [illegible] |
| 911 (Brown, C.L.R.) | 23 3 | Chancre penis, Aug., 1910. | Sore throat. | Voice hoarse, mucous patches fauces and postpharyngeal wall and lips. Anal ulceration. Serum —. | Dec. 22, 1910. .5 gm. Intravenous. | Rise in temperature 102°, chill and vertigo (12 hours). | Lesions 50% improved 2 days, healed 6 days. | Not discharged. | Dec. 9, + + Dec. 22, — Dec. 27, — Jan. 6, — Jan. 12, — | Not known | [illegible] | [illegible] | [illegible] |
| Do. | Do. | Do. | Do. | Apparently well. Wassermann. | Jan. 14, 1911. .6 gm. Intramuscular. Buttock. | Moderate pain. | No lesions present at injection. See column on Wassermann reactions. | Apparently well. Discharged Jan. 18, 1911. | | Do. | 1 mo. | Well, Feb. 1, 1911. | [illegible] |
| 909 (Davis) | 26 3 | Unknown. | Ulceration tonsil, eruption. Nov., 1910. | General eruption, sore throat, fever, ulceration tonsil. Serum + +. | Nov. 29, 1910. .6 gm. Intramuscular. Erector spinæ. | Severe pain in back, not able to walk 10 days. | Ulceration healed 11 days. Pain, induration back for 2 mos. | Apparently well. Duty Dec. 16, 1910. | [illegible] + + Dec. 5, + + Dec. 16, + + Jan. 23, + — Jan. 30, — | 14 days | 30 days | Well, Feb. 1, 1911. | [illegible] |
| 930 (Waits) | 22 1 | Chancre penis, June 6, 1910. | Eruption, mucous patches. June 15, 1910. | Very severe ulceration mouth, fissured tongue, palmar and plantar psoriasis, severe. Serum +. | Oct. 18, 1910. .5 gm. Subcutaneous. (Suspension.) | Moderate pain. Induration lasting 2 mo. | No effect on lesions. | Not discharged. | July 25, + Aug. 22, + + Sept. 22, + + Oct. 25, + + Nov. 10, + + | Sent exclusion before | [illegible] | Relapse. | [illegible] |
| Do. | Do. | Do. | Do. | Do. | Nov. 19, 1910. .5 gm. Intramuscular. Buttock. | Severe pain. Fainting. | Mouth healed 12 days. Psoriasis gone in 20 days. | Apparently well. No symptoms. Duty Dec. 15, 1910. | Nov. 5, 1910, + + Nov. 17, + + Nov. 22, + + Nov. 27, + + Dec. 5, + + Dec. 10, + + Dec. 16, + — | 3 mos. | 1 mo. 22 [illegible] | [illegible] | [illegible] |
| Do. | Do. | Do. | Do. | Serum +. Had two epileptiform convulsions. | Jan. 10, 1911. .45 gm. Intravenous. | Headache. Felt worse. | No effect on convulsions. | Still in hospital for other disease. No syphilitic manifestations. | Jan. 12, 1911, + Jan. 16, 1911, + — | See columns above | [illegible] | Jan. 30, [illegible] Wassermann reactions. | [illegible] |
| 831 (Allen, L.) | 19 2 | Chancre penis, July 2, 1910. | Mucous patches. Nov. 3, 1910. | Large mucous patches cheeks and lips. Serum + + (Nov. 3). | Nov. 3, 1910. .5 gm. Intramuscular. Buttock. | Slight pain. | Mouth healed 11 days. | Apparently well. Duty Nov. 20, 1910. | Nov. 5, 1910, + + Nov. 10, 1910, + Nov. 20, 1910, — Dec. 10, 1910, — | 1 mo. 15 days | 20 days | Remaining well, Feb. 1, 1911. | [illegible] |
| 643 (Kimmitt) | 27 2 | Unknown. | No secondaries admitted. Ulcer, anal, severe, since Oct., 1909. | Deep and extensive ulceration about anus. Serum + weak (Nov. 19). | Nov. 22, 1910. .5 gm. Intramuscular. Buttocks. | Severe pain, fainting, rise in temperature 3 days. Sciatica. | Ulcer healed 50% 6 days. | Ulcer 75% healed and healing slowly. Duty Feb. 1, 1911. | Nov. 19, +, weak. Dec. 12, — Dec. 16, — Jan. 5, — Jan. 12, — | 11 mos. | 2 mos. 8 days | Practically well, Feb. 1, 1911. Recommended for cure. Second [illegible] weeks. | [illegible] |
| 732 (Megee) | 29 1 | Chancre penis, July 25, 1910. | Severe pustular eruption. Aug. 2, 1910. | Cachexia, very severe. Destructive pustular skin lesions. Serum +. | Oct. 18, 1910. .5 gm. Subcutaneous. (Suspension.) | Slight pain. | Lesions healed rapidly for a month. | Not discharged. | Sept. 6, 1910, ++, Nov. 8, — Oct. 5, 1910, + Nov. 11, — Oct. 25, 1910, + Nov. 19, | See columns below | Further [illegible] after [illegible] | Partial relapse after [illegible] mo. | [illegible] |
| Do. | Do. | Do. | Do. | Nearly as bad as noted in column above. New pustules appearing. Serum — (Nov. 29). | Nov. 29, 1910. .6 gm. Intramuscular. Buttock. | Vomiting. Severe pain for 1 day. | Lesions nearly healed in 7 days. Completely healed in 1 mo. | Apparently well. Duty Jan. 4, 1911. | Dec. 5, 1910, — Dec. 27, 1910, — Jan. 5, 1911, — | 3 mos. | 3 mos. | Well, [illegible] mo. | [illegible] |
| 860 (Laird) | 40 10 | Unknown. | No secondaries. Testicle enlarged 1 year. | Right testicle enlarged three times. Gumma. Serum + (Nov. 19). | Nov. 19, 1910. .5 gm. Intramuscular. Buttock. | Severe pain 12 hours. Nausea. | Testicle reduced one half in 4 weeks, and three fourths 2 mos. | Improved. Testicle reduced one half. Duty Dec. 24, 1910. | Nov. 12, 1910, + + Dec. 5, 1910, + + Dec. 12, 1910, + + Dec. 16, 1910, + + Dec. 22, 1910, + + Jan. 9, 1911, + + | See on sick report | [illegible] | Incomplete [illegible] | [illegible] |
| Do. | Do. | Do. | Do. | Right testicle still slightly enlarged. Serum +. | Jan. 19, 1910. .6 gm. Intramuscular. Buttock. | Moderate pain 1 day. | Testicle not materially diminished in 12 days. | Duty Jan. 23, 1911. No change in 3 days since injection. | See columns above | 3 mos. 4 [illegible] | [illegible] | [illegible] |
| 874 (Brinson) | 34 12 | Chancroids penis, 1898. | No secondaries admitted. Gummata scalp. | Superficial necrosis of skull from gummata breaking down. Severe facial neuralgia. Serum +. | Dec. 6, 1910. .6 gm. Intramuscular. Buttock. | Severe pain 4 hours. Rise in temperature 3 days. | Necrosis healed 6 days. No neuralgia after 2 days. | Apparently well. Duty Jan. 12, 1911. | Dec. 2, 1910, + + Dec. 16, 1910, + + Dec. 27, 1910, + Jan. 5, 1911, + Jan. 9, 1911, + — | Not estimated [illegible] other causes. | 1 mo. | Well, Feb. 1, 1911. | [illegible] |
| 834 (Benderowics) | 34 2 | Chancre penis, June 1910. | Diplopia and sore throat. Nov. 1, 1910. | Ulcer posterior pharyngeal wall 1 in. diameter. Serum + (Nov. 12, 1910). | Dec. 13, 1910. .6 gm. Intramuscular. Buttock. | Rise in temperature (100)° for 5 days. | Ulcer healed 50% 6 days, entirely healed 15 days. | Apparently well. Duty Jan. 6, 1911. | Dec. 12, 1910, — Dec. 22, 1910, — Jan. 5, 1911, — | 1 mo. 15 days | 22 days | [illegible] | [illegible] |
| 907 (Tyrrell) | 47 18 | Unknown. | No secondaries admitted. | Mitral regurgitation, cervico-brachial neuralgia. Recurrent. Serum —. | Dec. 29, 1910. .3 gm. Intramuscular. Buttock. | Moderate pain 1 day. | No effect on [illegible] | No improvement. Duty Jan. 18, 1911. | Sept. 26, 1910, + Dec. 19, 1910, — | 3 mos. 13 days | [illegible] | [illegible] | [illegible] |
| [illegible] (Rudisill) | [illegible] 4 | [illegible] Jan. 1910. | No secondaries admitted. | Choroid [illegible] Serum +. | Dec. 22, 1910. [illegible] Intramuscular. Buttock. | [illegible] | [illegible] | Still in hospital under observation. | Dec. 12, 1910, + Jan. 4, 1911, + Jan. 20, 1911, + + Jan. 25, 1911, + | 1 mo. 5 days | 1 [illegible] | Well, Feb. 1, 1911. | [illegible] |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 706 (Cornwell) | 22<br>3 | Chancre penis, Aug. 1, 1910. | Enlarged tonsils, mucous patches. Sept., 1910. | Mucous patches, tongue. Facial syphilide. Serum +. | Dec. 30, 1910. .4 gm. Intravenous. | None. | Lesions healed in 7 days. | Apparently well. Duty Jan. 11, 1911. | Aug. 16, 1910, + +<br>Nov. 22, 1910, +<br>Dec. 13, 1910, + +<br>Jan. 9, 1911, +<br>Jan. 23, 1911, + | 4 mos. 20 days | 11 days | Well, Feb. 1, 1911. | |
| 882 (Smith, Leroy) | 24<br>3 | Chancre penis, July 15, 1910. | Pustular eruption, condylomata. | Pustular eruption. Anal condylomata. Serum + + (Dec. 8). | Dec. 13, 1910. .55 gm. Intravenous. | Rise in temperature 103° (1 day). | Lesions healed in 9 days. | Apparently well. Duty Dec. 23, 1910. | Dec. 8, +<br>Dec. 20, +<br>Dec. 27, +<br>Jan. 9, + — | 8 days | 15 days | Well. No service. No further history. | Gave specimen. Specimen lost en route. |
| 881 (Randall) | 29<br>4 | Chancre penis, Jan. 4, 1910. | Papular eruption. June 20, 1910. | Cachectic, loss of 20 lb. weight, bedridden, arthritis knees and ankles. Rupial facial eruption. Serum + (June 23). | Dec. 8, 1910. .4 gm. Intravenous. | Rise in temperature 102° (2 days). | Improvement 48 hours. Able to walk in 7 days. | Not discharged. | Dec. 15, 1910, —<br>Jan. 3, 1911, +<br>Jan. 11, 1911, + — | 4 mos. | Few subsequent | Relapse, partial. Gained 14 lb. | Recovery in all things 6 mos. No report. |
| Do. | Do. | Do. | Do. | Arthritis left ankle. Relapse after "606" in 4 weeks. | Jan. 10, 1911. .45 gm. Intravenous. | Rise in temperature 101° (1 day), restless. | Pain and swelling gone from ankle 5 days. | Still in hospital under observation. | Jan. 18, +<br>Jan. 25, — | | | | |
| 870 (Simerly) | 27<br>6 | Chancre penis, Oct. 9, 1909. | Eruption, adenopathy, sore throat. March 4, 1910. | Very severe ulceration of fauces and uvula. Serum +. | Nov. 29, 1910. .5 gm. Intravenous. | Slight dizziness. | Lesions 50% improved in 48 hours, 90% in 10 days. | Not discharged. | Nov. 26, +<br>Dec. 8, +<br>Dec. 16, — | See columns above | 1 mo. 29 days. Still on sick rep't. | Well, Feb. 1, 1911. Gaining weight, but relapse not unlikely. | Do. |
| Do. | Do. | Do. | Do. | Do. Complete relapse. | Dec. 22, 1910. .6 gm. Intramuscular. Buttock. | Rise in temperature. Moderate pain. Diarrhea 3 days. | Lesions 75% improved 6 days, healed 12 days. | Apparently well. Duty Jan. 7, 1911. | Jan. 9, 1911, + | 3 mos. 29 days | See columns above | Complete relapse in 18 days. | Specimen lost en route. Gave specimen Dec. 16. |
| 911 (Brown, C.L.R.) | 23<br>3 | Chancre penis, Aug., 1910. | Sore throat. | Voice hoarse, mucous patches fauces and post-pharyngeal wall and lips. Anal ulceration. Serum —. | Dec. 22, 1910. .5 gm. Intravenous. | Rise in temperature 102°, chill and vertigo (12 hours). | Lesions 50% improved 2 days, healed 6 days. | Not discharged. | Nov. 4, 1910, +<br>Dec. 20, 1910, —<br>Dec. 23, 1910, —<br>Dec. 27, 1910, —<br>Jan. 9, 1911, — | Not known | See columns above | Should show "606" given. | Specific intestinal ulceration. Has Gamblian ulcers also. |
| Do. | Do. | Do. | Do. | Apparently well. Wassermann. | Jan. 14, 1911. .6 gm. Intramuscular. Buttock. | Moderate pain. | No lesions present at injection. See column on Wassermann reactions. | Apparently well. Discharged Jan. 18, 1911. | | Do. | 1 mo. | Well, Feb. 1, 1911. | See columns above. |
| 809 (Davis) | 26<br>3 | Unknown. | Ulceration tonsil, eruption. Nov., 1910. | General eruption, sore throat, fever, ulceration tonsil. Serum + +. | Nov. 29, 1910. .6 gm. Intramuscular. Erector spinæ. | Severe pain in back, not able to walk 10 days. | Ulceration healed 11 days. Pain, induration back for 2 mos. | Apparently well. Duty Dec. 18, 1910. | Nov. 26, 1910, +<br>Dec. 8, 1910, +<br>Dec. 14, 1910, —<br>Dec. 27, 1910, —<br>Jan. 25, 1911, — | 14 days | 30 days | Well, Feb. 1, 1911. | Spots. |
| 930 (Waits) | 22<br>1 | Chancre penis, June 6, 1910. | Eruption, mucous patches. June 14, 1910. | Very severe ulceration mouth, fissured tongue, palmar and plantar psoriasis, severe. Serum +. | Oct. 18, 1910. .5 gm. Subcutaneous. (Suspension.) | Moderate pain. Induration lasting 2 mo. | No effect on lesions. | Not discharged. | July 22, +<br>Oct. 15, +<br>Oct. 23, + +<br>Oct. 31, + +<br>Nov. 11, + +<br>Nov. 18, + + | See columns below | Very extensive | Patient died. | Recovery in all things 6 mos. Specimen lost en route. |
| Do. | Do. | Do. | Do. | Do. | Nov. 19, 1910. .5 gm. Intramuscular. Buttock. | Severe pain. Fainting. | Mouth healed 12 days. Psoriasis gone in 20 days. | Apparently well. No symptoms. Duty Dec. 15, 1910. | Nov. 5, 1910, + + Dec. 27, + +<br>Dec. 5, 1910, + + Jan. 25, + —<br>Dec. 16, 1910, + + | 3 mos. | 1 mo. 23 days | Weak. Gave a third dose "606" subcutaneously + | See columns above. |
| Do. | Do. | Do. | Do. | Serum +. Had two epileptiform convulsions. | Jan. 10, 1911. .45 gm. Intravenous. | Headache. Felt worse. | No effect on convulsions. | Still in hospital for other disease. No syphilitic manifestations. | Jan. 11, 1911, +<br>Jan. 18, 1911, + — | See columns above | See columns above | Jan. 18, delirious, with convulsions. Died Jan. 22, 1911. Specimen lost en route. | |
| 831 (Allen, L.) | 19<br>2 | Chancre penis, July 2, 1910. | Mucous patches. Nov. 3, 1910. | Large mucous patches cheeks and lips. Serum + + (Nov. 3). | Nov. 3, 1910. .5 gm. Intramuscular. Buttock. | Slight pain. | Mouth healed 11 days. | Apparently well. Duty Nov. 25, 1910. | Nov. 5, 1910, + +<br>Nov. 12, 1910, +<br>Nov. 19, 1910, —<br>Dec. 10, 1910, — | 1 mo. 25 days | 30 days | Breaking well, Feb. 1, 1911. | Specimen lost en route. |
| 643 (Kimmitt) | 27<br>2 | Unknown. | No secondaries admitted. Ulcer, anal, severe since Oct., 1909. | Deep and extensive ulceration about anus. Serum + weak (Nov. 19). | Nov. 22, 1910. .5 gm. Intramuscular. Buttocks. | Severe pain, fainting, rise in temperature 3 days. Sciatica. | Ulcer healed 70% 6 days. | Ulcer 75% healed and healing slowly. Duty Feb. 1, 1911. | Nov. 19, +, weak.<br>Dec. 12, —<br>Dec. 16, —<br>Jan. 3, —<br>Jan. 11, — | 11 mos. | 3 mos. 6 days | Practically well, Feb. 1, 1911. Specimen lost en route. Second, 21 days. Second, 6 weeks. | Specimen lost en route. Specimen lost en route. |
| 732 (Megee) | 29<br>1 | Chancre penis, July 25, 1910. | Severe pustular eruption. Aug. 2, 1910. | Cachexia, very severe. Destructive pustular skin lesions. Serum +. | Oct. 18, 1910. .5 gm. Subcutaneous. (Suspension.) | Slight pain. | Lesions healed rapidly for a month. | Not discharged. | Sept. 9, 1910, + +. Nov. 5, +<br>Oct. 15, 1910, + Nov. 11, —<br>Oct. 24, 1910, + Nov. 18, — | See columns below | Partial relapse after 1 mo. | Partial relapse three mos. | Specimen lost en route. |
| Do. | Do. | Do. | Do. | Nearly as bad as noted in column above. New pustules appearing. Serum — (Nov. 26). | Nov. 29, 1910. .6 gm. Intramuscular. Buttock. | Vomiting. Severe pain for 1 day. | Lesions nearly healed in 7 days. Completely healed in 1 mo. | Apparently well. Duty Jan. 4, 1911. | Dec. 2, 1910, —<br>Dec. 27, 1910, —<br>Jan. 3, 1911, — | 2 mos. | 3 mos. | Well, Feb. 1, 1911. | Specimen lost en route. |
| 869 (Laird) | 40<br>10 | Unknown. | No secondaries. Testicle enlarged 1 year. | Right testicle enlarged three times. Gumma. Serum + (Nov. 19). | Nov. 19, 1910. .5 gm. Intramuscular. Buttock. | Severe pain 12 hours. Nausea. | Testicle reduced one half in 4 weeks, and three fourths 2 mos. | Improved. Testicle reduced one half. Duty Dec. 28, 1910. | Nov. 29, 1910, + +<br>Dec. 5, 1910, + +<br>Dec. 12, 1910, + +<br>Dec. 19, 1910, + +<br>Dec. 27, 1910, + +<br>Jan. 3, 1911, + + | Not on sick report | See columns above | Incomplete relapse. Testicle normal. Specimen lost en route. | Specimen lost en route. |
| Do. | Do. | Do. | Do. | Right testicle still slightly enlarged. Serum +. | Jan. 19, 1910. .6 gm. Intramuscular. Buttock. | Moderate pain 1 day. | Testicle not materially diminished in 13 days. | Duty Jan. 25, 1911. No change in 3 days since injection. | | See column above | 2 mos. 6 days | Incomplete relapse. Feb. 1, 1911. | |
| 874 (Brinson) | 34<br>12 | Chancroids penis, 1906. | No secondaries admitted. Gummata scalp. | Superficial necrosis of skull from gummata breaking down. Severe facial neuralgia. Serum +. | Dec. 6, 1910. .6 gm. Intramuscular. Buttock. | Severe pain 4 hours. Rise in temperature 3 days. | Necrosis healed 6 days. No neuralgia after 2 days. | Apparently well. Duty Jan. 12, 1911. | Dec. 2, 1910, + +<br>Dec. 19, 1910, + +<br>Dec. 30, 1910, + +<br>Jan. 2, 1911, +<br>Jan. 9, 1911, + — | Not exclusive treatment, other causes. | 1 mo. | Well, Feb. 1, 1911. | Specimen lost en route. |
| 834 (Benderowicz) | 24<br>2 | Chancre penis, June 1910. | Diplopia and sore throat. Nov. 1, 1910. | Ulcer posterior pharyngeal wall 1 in. diameter. Serum + (Nov. 12, 1910). | Dec. 13, 1910. .6 gm. Intramuscular. Buttock. | Rise in temperature (100½°) for 5 days. | Ulcer healed 80% 6 days, entirely healed 15 days. | Apparently well. Duty Jan. 6, 1911. | Dec. 14, 1910, —<br>Dec. 30, 1910, —<br>Jan. 6, 1911, — | 1 gm. 10 days | 30 days | Well, Feb. 1, 1911. | |
| 907 (Tyrrell) | 47<br>18 | Unknown. | No secondaries admitted. | Mitral regurgitation, cervico-brachial neuralgia incurable. Serum —. | Dec. 30, 1910. .3 gm. Intramuscular. Buttock. | Moderate pain 1 day. | No effect on neuralgia. | No improvement. Duty Jan. 16, 1911. | Sept. 23, 1910, +<br>Dec. 26, 1910, — | 3 mos. 15 days | 25 days | Worse. Cervico-brachial neuralgia acute. | Still under observation. Specimen lost en route. |
| 891 (Bailey) | 32<br>4 | Sore on penis in 1904. | No secondaries admitted. Rheumatism 7 years (not disabling). | Chronic disorder with anemia and blood. Serum +. | Dec. 23, 1910. .6 gm. Intramuscular. Buttock. | Slight pain. | Sore healed in 7 days. | Apparently well. Duty Jan. 6, 1911. | Dec. 30, 1910, +<br>Jan. 6, 1911, +<br>Jan. 20, 1911, + +<br>Jan. 27, 1911, + | 1 mo. 5 days | 1 mo. 5 days | Well, Feb. 1, 1911. | Incomplete treatment. |
| 892 (Pennington) | 29<br>3 | Chancre penis, 1909. | No secondaries admitted. | Fever, cachexia, ulceration, gummata of scalp (6), and of right calf. Serum +. | Jan. 3, 1911. .6 gm. Intramuscular. Buttock. | Moderate pain 1 day. | Lesions healed rapidly. | Not discharged. | Dec. 12, 1910, —<br>Jan. 3, 1911, +<br>Jan. 6, 1911, +<br>Jan. 9, 1911, +<br>Jan. 23, 1911, — | Not on sick report | 30 days until on sick rep't. | Well, Feb. 1, 1911. Gaining weight. | No improvement. Specimen lost en route. |
| 906 (Spencer) | 21<br>2 | Unknown. | No secondaries admitted. | Pain shoulders, back, and occiput. Serum +. | Dec. 30, 1910. .6 gm. Intramuscular. Buttock. | Moderate pain 1 day. | No effect on pain. | No improvement. Duty Jan. 16, 1911. | Dec. 26, 1910, + +<br>Jan. 23, 1911, + | Not on sick report | 30 days until on sick rep't. | No improvement. | Incomplete treatment. |
| Chancroid penis, 1906. | | No secondaries admitted. | Patient upper limbs shot wounds. Active tuberculosis. Serum +. | Dec. 30, 1910. .6 gm. Intramuscular. Buttock. | Moderate pain 1 day. | | | | Dec. 26, 1910, + +<br>Jan. 2, 1911, + +<br>Jan. 9, 1911, + —<br>Jan. 16, 1911, —<br>Jan. 23, 1911, — | 1 year | 2 mos. 10 days until in hospital | Specimen lost en route. | Specimen lost en route. |
| Chancre penis, Dec. 7, 1910. | | | Eruption nearly gone. Serum +. | Dec. 30, 1910. .6 gm. Intramuscular. Buttock. | Severe pain radiating from buttock to knee in temperature (100°) 3 days. | | | | Jan. 6, 1911, + —<br>Jan. 13, 1911, — | Not on sick report | 3 days | Well, Feb. 1, 1911. | Specimen lost en route. |
| | | | Serum +. | Dec. 30, 1910. .6 gm. Intramuscular. Buttock. | Moderate pain 1 day. | | | | | Not on sick report | 4 days | Well, Feb. 1, 1911. | Specimen lost en route. 3 years. |

## Results in Tabular Form of the Administration of

(From a series of cases treated at the

| No. | Age. | Primary Lesion. | Secondaries. Late Lesions. | Condition at Time of Injection of "606." | Dose of Injection. Dosage. Method. | Immediate Results. |
|---|---|---|---|---|---|---|
| 606 (Lewis) | 28 | Chancre penis. Aug. 1, 1910. | Enlarged lymphatic glands. Nov. 1, 1910. | Numerous papules, tongue, and pharynx. Special syphilide. Serum +. | Dec. 30, 1910. .4 gm. Intravenous. | None. |
| 607 (Smith, Leon) | 21 | Chancre penis. July 12, 1910. | Papular eruption. Nov. 1, 1910. | Papular eruption. Abundant condylomata. Serum + + (Dec. 8). | Dec. 13, 1910. .6 gm. Intravenous. | Slight temperature. Lasting 1 day. |
| 608 (Bennett) | 32 | Chancre penis. Jan. 4, 1910. | Papular eruption. Jan. 20, 1910. | Cachexia; loss of 30 lb. in weight; bedridden; ataxia; hospital facial eruption. Serum + (June 23). | Dec. 3, 1910. .4 gm. Intravenous. | Slight temperature. Improved (2 days). |
| 609 (Lewis) | 19 | Do. | Do. | Arthritis left ankle. Relapse after "606" in 4 weeks. | Jan. 10, 1911. .6 gm. Intravenous. | Slight temperature. Pain in ankle. 10th (1 day). Rest. |
| 610 (Smith) | 27 | Chancre penis. Dec. 1, 1909. | Papular eruption. Acne, Mercurial. March 1, 1910. | Very severe ulceration of fauces and uvula. Serum + . | Nov. 20, 1910. .5 gm. Intravenous. | Slight dizziness. |
| 611 (Brown, C. H.) | 35 | Do. | Do. | Complete relapse. | Dec. 22, 1910. .6 gm. Intramuscular. Moderate pain. Induration. | Slight temperature. Lasting about 3 days. |
| 612 (Davis) | 32 | Chancre penis. Aug. 1909. | Throat. Sore throat. | Very severe mucous patches Extensive and persistent ulceration. And deposition. Serum —. | Dec. 22, 1910. .6 gm. Intravenous. 1/2 cubic cent. (12 hours). | Slight temperature. Lasting about 2 days. Severe pain. |
| 613 (Lewis) | 20 | Do. | Do. | Appearing well. Assymptomatic. | Jan. 14, 1911. .6 gm. Intramuscular. Buttock. | Moderate pain. No lesion at injection point. |
| 614 (Davis) | 36 | Unknown. | Eruption. (Ineradicable lesion. Nov. 1, 1910. | General eruption, sore mouth, buccal tongue, throat, larynx, ulceration (nasal. Serum + + . | Nov. 20, 1910. .6 gm. Intramuscular. Severe pain. | Severe pain in back. Unable to walk. 10 days. |
| 615 (Allen) | 22 | Chancre penis. June 6, 1910. | Eruption, mucous patches. June 16, 1910. | Very severe ulceration mouth, buccal tongue, palate and pharynx. Serum + . | Dec. 18, 1910. .5 gm. Subcutaneous. Severe pain. | Moderate pain. Induration lasting 2 mos. |
| 616 (Allen, L.) | 19 | Do. | Do. | Do. | Nov. 19, 1910. .5 gm. Intramuscular. Buttock. | Severe pain. Paint. Slight. |
| 617 (Hamilton) | 19 | Do. | Do. | Had two epileptiform convulsions. Serum +. | Jan. 10, 1911. .6 gm. Intravenous. | Headache. Felt sick and worse. |
| 618 (Allen, L.) | 19 | Chancre penis. July 2, 1910. | Mucous patches. Nov. 4, 1910. | Large mucous patches cheeks and lips. Serum + + (Nov. 3). | Nov. 3, 1910. .5 gm. Intramuscular. Buttock. | Slight pain. |
| 619 (Hamilton) | 32 | Unknown. | So secondaries admitted. Leucoderma, last seen Oct., 1909. | Deep and excessive ulceration about anus. Serum + weak (Nov. 19). | Nov. 22, 1910. .5 gm. Intramuscular. Buttock. | Severe pain. Pain. Rise in temperature 2 days. Sensation. |
| 620 (Morgan) | 29 | Chancre penis. July 1, 1910. | Severe papular eruption. Aug. 1910. | Moderate. Very severe. Destructive pustular (impetiginous) eruption. Skin lesions. Serum + . | Dec. 18, 1910. .5 gm. Subcutaneous. (Sup- (pression). | Slight pain. |
| 621 (Lahr) | 40 | Unknown. | So secondaries. Papular eruption. Lasted 1 year. | Slight papular eruption. Three times. Serum + (Nov. 19). | Nov. 20, 1910. .5 gm. Intramuscular. Buttock. | Vomiting. Severe pain 12 hours. Temperature. Sensation. |
| 622 (Phillips) | 34 | Chancre penis. April, 1909. | So secondaries admitted. Extensive ulceration of anus and rectum. Serum +. | Superficial necrosis of right tonsil. Spreading down. Severe facial neuralgia. Serum + . | Dec. 3, 1910. .5 gm. Intramuscular. Buttock. | Severe pain. Rise in temperature. |

Results in a series of cases of syphilis treated with "606" (Ehrlich-Hata) and the Technique Employed.

obvious that if lesions can be made to disappear more quickly with arsenobenzol than with mercury and iodide of potassium, an individual with syphilis can be returned to duty sooner if the former method is used in his treatment than if the latter method is chosen. Many a mild case of syphilis without lesions hardly needs hospital treatment and hence does not appear on the sick report, while in the series of cases reported were a number of men who if arsenobenzol had not been employed must have been discharged from the service for disability, — at least 20% in this series reported.

APPARENT CURES.

Thirteen patients are regarded as well and have no symptoms at the present time; of these, seven have positive sera and hence cannot be called cured; in addition, in a number of cases insufficient time has elapsed to pronounce judgment. There are two incomplete cures, one of these having a negative serum after one dose with a persistent lesion, while the other had just had a second dose. In two cases the results are not satisfactory on account of the severity and destructiveness of the lesions in one (529) and the presence of chronic cardiac disease in the second (907). In three cases there were frank relapses (881, 870, 732), but in only one case, omitting cases 907 and 529, which are hardly fair to consider, was there an absolute failure, and this was with the subcutaneous method (930).

CONCLUSIONS.

Justifiable conclusions are hard to draw from so short a series of cases, covering a limited period of time, and the reader can perhaps draw his own from the data submitted. It is thought the series of serum reactions given will prove interesting and instructive. The fact that two relapses out of six cases occurred after intravenous injections (33%), while no relapse occurred after an intramuscular injection, is of interest as indicating a choice of methods in favor of the intramuscular. On the whole, from a standpoint of relief from suffering, leaving aside the question of permanent cure, arsenobenzol has been successful, as would be expected from the reports of other observers during the past half year. Finally, the shortening of the time of infectivity of the lesions of syphilis where arsenobenzol is used is of enormous importance in the military service from a sanitary standpoint and would alone, I believe, justify its use, even if a permanent cure were not effected.

ADDITIONAL NOTES.

Since the foregoing paper was written (Feb. 1, 1911) additional data in regard to several of the cases are at hand. Case 930 shortly after Feb. 1 showed a weakly positive serum and was without symptoms of syphilis. At the site of the first injection in the back (Wechselmann's method) there persisted a hard lump, nearly painless. About Feb. 10, he complained of dimness of sight in the right eye. This increased until vision in that eye became almost nil, while the retinoscopic examination showed numerous hemorrhages into the retina. Chronic arsenical poisoning seemed the most probable cause and it was deemed best to at least open the swelling in the back which had persisted for over four months. On cutting into this a mass was revealed which when finally enucleated by blunt dissection showed an encapsulated collection of yellow material representing almost the entire dose of "606" as originally given in suspension. On microscopic examination the yellow granules were plainly visible. It was expected that, this irritant removed, the patient would improve if chronic arsenical poisoning were the cause. This was not, however, the case, for the left eye a few days ago became involved and two or three days before the present writing (March 10) an iritis of the right eye appeared. As the case stands now, it is not clear whether the eye lesions are due to arsenical poisoning from oxidized arsenic remaining in the tissues and being absorbed in small quantities instead of being promptly eliminated or whether they are due to an uncured syphilis. At present the patient is being treated with mercury and iodide, since I have not had the hardihood to give a fourth dose of "606."

Case 732 is absolutely well (March 10), with a negative serum. He also had a persistent lump in the back, and since he had received a suspension of "606" by Wechselmann's method as a precaution, an incision was made into the lump with the expectation of finding unabsorbed arsenic. Nothing was found but a pasty substance which when curetted out did not give the test for arsenic.

Case 860 still has a positive serum but the testicle is normal in size, although a little indurated. This will I believe prove to be a cure.

Case 881 at the time of leaving the hospital had a negative serum and had gained 30 lb.

Case 929 proved deceptive. At the time of leaving the hospital his serum was negative and he presented no symptoms. About Feb. 10, he suffered a complete relapse, but still showed a negative serum. He was readmitted and received an intravenous injection with a prompt disappearance of the headache, and softened areas in the scalp. After two weeks he was thought to be well, but at the present writing he has again suffered a relapse, the serum being still negative. In this case he has not been given a third dose as yet. This is the second case of persisting lesions accompanied by a negative serum.

From the above notes it may be seen that new difficulties are daily arising. With increasing experience my own opinion is that we must withhold judgment upon the merits of "606" for some time to come.

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THE president of Bowdoin College has issued an appeal to the alumni association for $140,000 for the use of the medical department. The most pressing needs of the institution are new laboratories and improvements and hospital facilities for the establishment of a dispensary in Portland. — *Jour. Am. Med. Asso.*

## LIQUID AIR IN SURGERY.

BY THEODORE CHAPIN BEEBE, M.D.,
*Surgeon to the Boston Dispensary; Instructor in Surgery, Tufts College Medical School.*

THE value of liquid air in various affections of the skin, both congenital and acquired, has been so definitely proved by many observers that it now has a very positive place in the means at our disposal for the treatment of such lesions. The range of usefulness includes the many varieties of naevi, epitheliomata, lupus erythematosus, birthmarks of all varieties, warts, calluses and some forms of chronic inflammation. Of all forms of benign affections, the various birthmarks are the cause of more mental suffering to their unfortunate possessors than almost any other abnormality. By means of liquid air it is possible to remove these blemishes in almost every case in a way which causes practically no pain and which leaves practically no scar. It is of the greatest importance that these lesions be treated early in life while the tissues are soft, in order to obtain the best result. Port-wine marks, in particular, are much harder to eradicate in adults than in young children. Spongy naevi, if not taken early in life, are very prone to enlarge to a point where even excision with a knife is impracticable. Such cases, it is true, leave some scars, but nothing comparable to those following the usual treatment by means of the actual cautery. As for lesions on the face, no treatment yet devised is so satisfactory as liquid air. The use of carbon dioxide snow is attended by great pain, as attested by several of my patients; requires many more applications, and is inferior in all ways to liquid air. X-ray treatment of surface lesions is a long-drawn-out process, with very problematical eventualities. The recurrence of such lesions as epitheliomata and lupus erythematosus among my early cases was due to too short and too light applications of the liquid air. With growing experience and knowledge of the possibilities of liquid air, such recurrences are becoming more rare. It must be distinctly understood, of course, that the writer refers *only* to such cases where there is no metastasis or glandular imvolvement. Applications to the mucous membrane of the mouth can be made easily and safely, and in one case several applications to the sclerotic coat of the eyeball have been made with no harmful results. A short history of several typical cases will be given showing the possibilities of this method of treatment.

### NAEVUS.

CASE 1. M. C., Nov. 19, 1907, one and one-half years old. Naevus approximately 1 inch square on bridge of nose since birth. Extends down to left inner canthus. Greatly dilated, bluish-red superficial vessels. Two applications of liquid air with moderately firm pressure for ten seconds with an interval between of one month were given. When seen six months later there was a thin pinkish-white scar scarcely visible except when the baby cried. At recent accounts the result was perfectly satisfactory.

CASE 2. R. L., March 12, 1908, seven weeks old. Naevus on dorsum of right foot since birth. Area size of twenty-five cent piece, slightly raised above surrounding skin. Lesion entirely removed after one application of liquid air.

CASE 3. P. H., February, 1909, five months. Congenital angioma in center of forehead about size of ten-cent piece. Five applications at intervals of three or four weeks were given. When seen six months ago the slight scar was only noticeable when the child cried.

CASE 4. D. C., March 30, 1910. Age, three and three-fourths years. Angioma on left lower eyelid about $\frac{1}{4}$ in. in diameter. Entirely removed with one application of twenty seconds' duration. No scar visible.

CASE 5. P. B., December, 1907. Age, two and three-fourths years. Naevus on left cheek since birth. At that time size of head of pin. Grew larger and was excised in December, 1908. Recurred and grew rapidly till it was $\frac{1}{2}$ in. long and $\frac{1}{4}$ in. wide. Treated by electric needle with no improvement. After two applications of liquid air the lesion was healed with no subsequent recurrence to date.

CASE 6. F. H., May, 1910. Age, twenty-two years. Student at Radcliffe. Naevus $\frac{1}{4}$ in. diameter on end of nose. One application of ten seconds to naevus, also an application to a brown-pigmented mole on back of left hand. Both healed perfectly. No scars.

### MOLES.

CASE 1. L. D., March, 1909. Age, twenty. Colored. Has a congenital hairy-and-pigmented mole extending from just above hair-line down over right side of forehead and cheek as far as angle of jaw, and backward as far as the ear. Treated year before with $CO_2$ snow for three months. Gave up that treatment because of the pain. Above right eyebrow and below outer canthus are thick papillary areas. Whole area covered with long black hair. Several applications of ten seconds each were made to different areas of the lesion, at intervals of about one month, through the spring of that year, and again the next fall and winter. Many areas of normal skin were produced with very little scarring. During the winter of 1910 was recommended to have x-ray treatment for the removal of the hair over the lesion. Is to report for further treatment. The result so far has been perfectly satisfactory. The liquid air has no effect on the hairs of a hairy mole.

CASE 2. S. H., November, 1909. Age, twenty-eight years. Has two small moles on her nose, and two on the forehead. Completely removed after two applications of fifteen seconds each.

CASE 3. E. H., February, 1909. Age, twenty-five years. Congenital hairy pigmented mole on chin. Five applications over period of two months. Mole disappeared, but hairs remained. Decided to have these removed with the electric needle.

### PORT-WINE MARKS.

CASE 1. J. E., November, 1908. Age, ten years. Since birth has had an irregularly-shaped port-wine mark on right cheek 3 in. long and 2 in. broad at lower end. Had had one liquid air application in New York. Has been given many applications over various portions of the area at intervals since. At present there are many small areas of normal appearing skin but there is also considerable red area. My mistake in this case was in using mild pressure for short periods of ten to fifteen seconds for fear of causing scar-formation. Am now using moderately firm pressure for thirty to thirty-five seconds.

CASE 2. S. P., April, 1910. Age, twenty-eight years. Port-wine mark behind left ear, and extending down on

to neck over an irregular area size of the palm of the hand. Treated for a year with radium with no appreciable improvement. After four applications over period of four months there was a wonderful improvement. There is now a very little red area left behind the ear, and it is expected that this will soon be replaced by white skin.

### WARTS.

A large number of warts, particularly on the face, lips and scalp, have been treated with success.

#### CHLOASMA.

Case 1. M. C., October, 1909. Age, fourteen months. Since birth has had an area of very brown chloasma on left cheek 2 in. long by 1½ in. broad. Has had several applications over area at different times with varying amounts of pressure. At present the only remaining trace is a slight redness of the skin which is gradually fading out.

Case 2. D. W., June, 1909. Age, five years. Since birth has had a light brown area of chloasma extending irregularly across the right cheek from the ear to the middle of the upper lip. Liquid air applied to three portions of the area for ten seconds each. The mother reported that each area treated lost its brown color in about one week. Redness of the skin remained two months. In December, 1909, the remaining portions of the area were treated with one application each. The result has been perfect. Other cases of the same lesion of smaller extent have done equally well.

#### XANTHOMA.

Two cases of xanthoma have been entirely cured. In one, the process was on the side of the nose where it was being constantly irritated by eyeglasses.

Of perhaps more interest to the practitioner are the cases of the less benign new-growths, of which only a few descriptive cases will be cited.

#### EPITHELIOMA.

Case 1. W. H., March, 1910. Age, fifty-four years. Has had a growth in the skin over the bridge of the nose four to six months. Started as a small scaly "pimple." Has grown steadily ever since. Is now a hard nodule ½ in. in diameter with a depressed center covered with a crust, and indurated white edges. After three applications of twenty seconds each over period of one month, the lesion was entirely healed, leaving a small white scar. There has been no recurrence to date.

Case 2. S. M., May, 1909. Age, seventy-two years. Has had a growth just above right ear three to four months. There is a depressed center covered with a crust, with indurated edges. The area is 1 in. long by ½ in. wide. Two applications of twenty seconds each, repeated the next day, caused the disappearence of the lesion, and it has not yet recurred.

Case 3. A. S., December, 1909. Age, eighty years. Has had a growth on the right side of the nose for the past twelve years. Has grown no larger in the past two years. There is a button-like appearance, with heaping up of the edges and an ulcerated center. Liquid air applied in December and again in March, 1910. Lesion healed promptly with small white scar. No recurrence to date.

Case 4. G. L., February, 1909. Age, fifty-four years. Operated in 1888 for epithelioma of left inner canthus, and again in 1895. In 1903 x-ray treatment for six months. Operated again in January, 1908. Since then has had x-ray treatment twice a week with no especial benefit. Liquid air was applied to several portions of the new growth about the inner canthus at intervals of two weeks. Each area touched promptly healed. On March 31 it was noticed that there was a considerable extension on to the eyeball. Applications were made to the sclerotic conjunctiva on the advice of Dr. H. B. Chandler and with the consent of the patient. There was no especial pain, nor was there any other ill-effect. Two weeks later the portion thus treated was apparently healed. In May of the same year a small area internal to the eye on the lachrymal bone was treated. During the summer there was extension of the process internal to and behind the eyeball, leading to subsequent enucleation. The interesting feature of this case is that there was no recurrence in the areas treated. If the case could have been so treated in the beginning it is fair to assume that the spread of the disease might have been checked.

Case 5. E. W., January, 1910. Age, sixty years. Father and brother both had epitheliomata on their faces. This patient has had an epithelioma growing on the right cheek, midway between the eye and ear, for past twenty years. Area is about ¾ in. by ½ in. Another smaller area is situated just in front of the right ear, and there are two small areas about ¼ in. in diameter below this. The whole area over the zygomatic process feels nodular beneath the skin. The various areas were treated four times at intervals of two weeks, and healed readily. The patient, who is captain of of a sailing-vessel, came back recently with recurrences in the two larger areas. There were no glands to be felt in the neck. He was unable to remain in the city, and left before he could be treated. In this case radical excision of the epitheliomatous areas would have been impossible without extensive skin-grafting, owing to the tightness and adherence of the skin over the zygomatic process. Any operative procedure would have involved practically the whole side of the face.

Case 6. C. B., November, 1909. Age, fifty years. Has had a superficial epithelioma on the left cheek just below the eyelid. The center is slightly ulcerated, with surrounding induration. After two applications, two weeks apart, the lesion healed with no appreciable scar. There has been no recurrence up to date.

Two other cases of epithelioma on the cheek and nose, after remaining healed a year, have shown recurrences the size of a pinhead which have immediately yielded to treatment. Other cases have been treated so recently as to be of no value in this report. Compared with results after excision and other forms of treatment, and in consideration of the comparative painlessness and prompt healing of this method of treatment, it is quite certain that we have in it a valuable curative agent.

#### LUPUS ERYTHEMATOSUS.

Case 1. E. W., March, 1909. Age, thirty-two years. Has had a large number of areas of lupus for several years on the forehead and both cheeks. Treated in many ways at various hospitals with practically no relief. At different times the areas were treated by me with liquid air, and all of them promptly healed. During my absence in the summer several new areas appeared, and were treated at one of our hospitals with carbon dioxide snow. She reported in the fall that the process was painful and slow, and not very suc-

cessful. She afterwards moved away and has been lost track of since.

Another interesting case may well be reported here. F. Y., October, 1909. Age, thirty-nine years. Has been under treatment some time for tuberculosis of the bones of the nose. For several months has had a swelling in the right cheek near the nose which almost constantly discharges pus or serum through a small opening. There is a great deal of induration and redness with almost no pain. After several applications of liquid air there was a complete cessation of the discharge, and the induration practically disappeared. The effect of the liquid air in stimulating the sluggish tissues in this case suggests its possible value in indolent ulcers and other slowly healing processes.

In view of the results shown above it must be admitted that liquid air is of the greatest possible service in many affections. The painlessness of its application, due to its action as a local anesthetic, the ease and certainty with which it may be administered, after a proper amount of experience, make it a most welcome advance in our methods of treatment.

## Reports of Societies.

### AMERICAN MEDICAL ASSOCIATION.

SEVENTH ANNUAL CONFERENCE ON MEDICAL EDUCATION, HELD AT CHICAGO, ILL., MARCH 1, 1911.

THE chairman, DR. ARTHUR DEAN BEVAN, presiding.

The chairman, in calling the conference to order, said, first, that medicine was to-day a science just as chemistry was a science and physics was a science. The art of medicine to-day rested as firmly upon a scientific basis as did the practical application of chemistry and engineering, and as there could be but one science in chemistry, so from now on there could be but one science of medicine. The fads and pathies that formerly existed under the old empirical practice of medicine became impossible in the light of modern scientific medicine.

A thorough training in the sciences upon which medicine was based was essential in the modern medical curriculum, and a thorough familiarity with disease processes in the living patient must be mastered before the student was permitted to begin independent practice.

First, after graduating from high school at least one year of training in physics, chemistry and biology; two years in the science of anatomy, physics, pharmacology and pathology; two years in the study of medicine, surgery and obstetrics and the specialties, with the opportunity of studying those subjects in the dispensary and hospital, and, lastly, a year's practical training as an interne in a hospital in which the student was a part of the medical machine which was responsible for the proper care of the patients.

#### PROGRESS AND NEEDS IN MEDICAL EDUCATION.

DR. N. P. COLWELL, Chicago, secretary of the Council, presented a report on this subject and stated that since 1904 there had been a positive decrease in the number of colleges until now the number had been reduced to 129. Of the 44 colleges closed since 1907, 20 colleges were closed outright and 24 by merging with others. Of the 20 which became extinct, 16 had been graded in Class C by the Council on Medical Education.

Since 1904 there had also been a decided improvement in the standards of admission. Until 1904 only three, or 1.9%, of all medical colleges were requiring for admission more than a high school education, but now 41, or 31.8% (nearly one third), of all colleges were requiring for admission one or more years of collegiate work; and the teaching of medicine as a whole had been placed more largely upon a university basis.

He referred to other improvements, the improvements that were still needed, and said that the educational safeguards were still faulty. The low-standard colleges referred to could exist only in states where the laws regulating the practice of medicine were inadequate or were not enforced. The solution of many of the problems of medical education rested in the hands of the state licensing boards and doubtless would be solved by them if they were given a fair chance. As a rule, the board was too closely connected with politics, and in some states the members were appointed largely for political reasons and were liable to be changed with every turn of politics.

He said there should be one portal to the practice of medicine. Not only should there be but one board in each state, but there should be a single educational standard fixed with which every applicant for a license to treat the sick by whatever means or methods should comply.

#### ENTRANCE EXAMINATIONS.

DR. THOMAS S. FISKE, of New York City, enumerated the following manifest advantages of the examinations held by the college entrance examination board: First, that they were uniform in subject matter. Second, that they were uniformly administered. Third, that they were held at many points to meet the convenience of students at one and the same time. Fourth, that they represented the co-operative effort of a group of colleges, no one of which thereby surrendered its individuality. Fifth, that they represented the co-operation of colleges and secondary schools in respect to a matter of vital importance to both. Sixth, that by reason of their uniformity they aided greatly the work of the secondary schools. Seventh, that they tended to effect a marked saving of time, money and effort in administering college admission requirements.

#### FIVE-YEAR MEDICAL COURSE.

DR. J. G. ADAMI, McGill University, Montreal, stated that of the five-year course in medicine now in operation in the leading Canadian schools it was not deemed essential that all the medical schools of the continent should adopt such a course. There might be other medical schools having a similar environment, however, which might obtain the best results educationally by establishing a similar course. Briefly, the objects in the development of the curriculum at McGill had been, first, to give a sound course in the preliminary science subjects; second, to make the courses from the first to the fifth year as practical as possible; third, to observe a natural sequence in the various courses; and, fourth, to give the maximum hospital instruction with the freest employment in the wards and of bedside instruction.

#### EQUIPMENT AND INSTRUCTION OF THE LABORATORY YEARS.

DR. E. P. LYON, of St. Louis, stated that the scientific instruction must be in the hands of professional scientists, not practitioners of medicine. They must be provided with proper laboratories for teaching and research with equipment, materials, libraries and as-

sistants. Anything less than this provision was to disregard the model which the school was trying to realize, namely, the good doctor. The laboratory work should be conducted by the professors and not by cheap assistants. If the right men were chosen for heads of departments, the choice of specific equipment might be left to them. The State Board would do well to insist that the colleges have trained instructors rather than publish lists of required equipment which might or might not be used. The three powers of good observation, experimentation and judgment were necessary for the technical work of the physician. But on account of his intimate relation to the people he needed many other physiological traits which might be summed up as character. The medical school could do little by precept, but much by example. The medical teachers should be men of character and culture.

INSTRUCTION AND EQUIPMENT OF THE CLINICAL YEARS.

Dr. George Blumer, Yale University, stated that the problem of teaching in clinical years was a threefold one: Training in the fundamental principles of medicine, surgery and obstetrics; practical training in physical and clinical diagnosis; and surgical technic. There was opportunity to apply the principles of technic by actual contact with patients. He made a comparison of clinical and didactic teaching as methods of imparting fundamental training. He pointed out the advantages and disadvantages, and said the proportion of such was determined by local conditions. There was a tendency to overemphasize didactic teaching. Technical training in clinical and physical diagnosis must be by laboratory methods. Didactic methods were out of place. He spoke of the advantages of the use of living animals in teaching surgical technic. Contact of students with individual patients was the keynote of the fourth-year instruction. A system of clinical clerks was desirable. Students should do most of the work in clinics.

He referred to the equipment necessary and spoke of laboratories with microscopic and necessary apparatus to teach students. The dispensary especially should be equipped for teaching with abundant material. The hospital especially should be equipped for teaching under competent medical school control. The greatest problem at present was lack of proper endowment, namely, properly paid and trained men in clinical years. There was a lack of absolute control of hospitals by medical schools.

SUBJECTS INCLUDED IN THE TWO YEARS OF COLLEGE WORK REQUIRED FOR ADMISSION TO MEDICAL COLLEGES.

Dr. Charles R. Bardeen, Madison, Wis., said that during the two years of college work required by the majority of medical colleges which could afford to maintain high preliminary standards, about half the time should be devoted to physics, chemistry, biology and English. The other half of the time should be divided between the study of foreign languages and one or more non-technical studies, such as art, history, economics, civics, mathematics and philosophy. The aim of this preliminary college work should be to produce breadth of view as well as to give some understanding of scientific knowledge and methods.

STATE LICENSE EXAMINATION.

Dr. Horace G. Norton, New Jersey, contributed a paper on this subject. The primary object of the examination was to determine whether the applicant had a competent practical knowledge of the science of medicine, and that he was not giving quiz-compend answers. Every experienced examiner could, he thought, distinguish compend answers from answers given from a full understanding of the subject. The examination of the student included his academic qualifications, and the reliability of the medical school from which he graduated. He thought that written examinations were good so far as they went, but they must be supplemented by other and practical tests. In his state the present law directed a written examination. He hoped this winter that a better medical law would be passed allowing the instruction of a practical examination. He had no personal knowledge of examinations in other countries, but would be glad to hear from those who had. What practical examinations should be required without too much trouble and expense? He was sure that the bedside examination in a hospital was impractical and unnecessary because of the time consumed. He did believe, however, that refraction, blood examination, urinary examination, recognition of pathological and bacterial slides, a showing of ability to use a microscope and the possible detection of heart and lung lesions and chemical reactions were practical. He then described the best method of preventing impersonation.

INTERSTATE RECIPROCITY.

Dr. W. T. Gott, Indianapolis, Ind., stated that in recognition of a strong demand in the profession some states entered into reciprocal agreements as early as 1901, and that at the present time the majority of states had such agreements with certain other states. Reciprocity in medical licensure, if conscientiously administered, had a favorable influence on educational standards. State practice acts were not apt to be weakened or the standards lowered, since that would endanger the reciprocal relations with other states. Medical colleges also were urged to keep their standards high, since their students were thereby made eligible to registration through reciprocity in a larger number of states.

As long as cults in the healing art existed, according to the speaker's judgment, it was a serious mistake to provide for each a separate board of medical examiners. The administration of such boards was consciously or unconsciously influenced by biased sympathies and unnecessary temptation was put in the hands of such boards to be lax in passing on the credentials of applicants of their own system of practice. The speaker further believed that credentials issued by a board composed entirely of representatives of one school or system of practice should not be acceptable for a certificate through reciprocity, and that such a ruling would have a salutary effect in upholding the standard of educational qualifications throughout the country.

Dr. Frank B. Hiller, Jefferson City, Mo., read a paper entitled "Valuation of Credentials."

Dr. James B. Herrick, of Chicago, followed with a paper entitled "Educational Functions of Hospitals."

At the joint conference on Medical Practice Acts, several papers were read bearing on medical practice acts and the public, the attitude of the judiciary in the enforcement of medical practice acts, and what should be the attitude of the state toward the practice of medicine. The subjects of the regulation of the practice of medicine for the public good, and the administrative duties of the State Boards of Medical Examiners were discussed.

At the Seventh Annual Conference on Medical Legislation the committee on resolutions submitted the following report, which was unanimously adopted:

*Whereas*, the Committee on Carroll Memorial has completed its work in a manner highly satisfactory to all concerned,

*Resolved*, that the final report of the committee be accepted and the committee discharged; and be it further

*Resolved*, that the committee recommends that the cordial thanks of the Conference and of the Association be extended to Major Ireland and his committee for the efficient manner in which they have accomplished their work.

*Resolved*, that the thanks of the Conference be extended to Drs. Halsey, Gay and Bristow for their individual efforts in the consideration of medical expert testimony and that this committee be discharged; and be it further

*Resolved*, that the Council on Health and Public Instruction be requested to establish a standing committee to give this matter thorough consideration and if possible to confer with a committee of the American Bar Association.

*Resolved*, that the Seventh Annual Conference of the American Medical Association on Medical Education and Medical Legislation deplores the action of Columbia University of New York in establishing a course of study in optometry, for the reason that opticians have never succeeded in founding an official school of optics or optometry, but have relied on the recognition or legalization of the word "optometry" to make them a profession, and for the further reason that the existence of such course at Columbia University has this year been used in many states as the chief argument for the further enactment of optometry laws, which are designed to permit opticians to practice medicine in a limited degree; and be it further

*Resolved*, that a copy of these resolutions be transmitted by the secretary of this Conference to the president of Columbia University of New York.

*Resolved*, that this Conference reaffirm its endorsement of the model bill on vital statistics and express its appreciation of the interest shown by Hon E. D. Durand, Director of the Census, and by Dr. Cressy L. Wilbur, Chief of the Division of Vital Statistics, in promoting the adoption of uniform vital statistic laws in the various states, and that the secretary be instructed to furnish a copy of these resolutions to the above-mentioned gentlemen.

## PHILADELPHIA COUNTY MEDICAL SOCIETY.

MEETING OF WEDNESDAY, DEC. 28, 1910.

The President, DR. HENRY LEFFMANN, in the chair.

SYMPOSIUM ON PNEUMONIA.

DR. W. M. L. COPLIN spoke upon:

### THE PATHOLOGY AND MORBID ANATOMY.

### SYMPTOMS AND COMPLICATIONS OF LOBAR PNEUMONIA.

DR. JAMES M. ANDERS: While the mode of onset is characteristic in about 80% of the cases, about 20% begin insidiously. The latter often pursue a protracted course, with slow defervescence and are apt to show complications and sequelæ. Defervescence by lysis is more commonly observed at present than formerly, but they are unattended by a decided fall in the leucocyte count, while the reverse is true of the actual crisis. A high pulse-rate implies danger in pneumonia. Leucocytosis may be slight or absent in cases in which the struggle for life is lost. I have never observed leukopenia, but this may occur; and leucocytosis is also absent in cases in which the scene is dominated by a prior infection, e. g., typhoid fever and certain other conditions. It is important that an examination of the lungs be made in cases of mania potu in which fever is present, since all other characteristic features may be in abeyance. The adhesive, rusty-colored sputum is a characteristic feature, but it is sometimes absent in the pneumonias occurring in the aged, in drunkards and in those showing marked toxemia. The physical signs yield evidence of great diagnostic importance. The value of systematic physical examination of the thorax with a view to detecting consolidation when present in suspicious cases is of the highest importance in subjects of emphysema, and in the aged, the acute infections, as well as in the commoner chronic diseases when fever develops. Attention is directed to certain signs which rarely arise in the opposite or uninvolved lung, such as impaired percussion-resonance, râles over the base, and to the fact that these are readily confused with actual consolidation. If practicable, blood cultures should be undertaken in dubious cases. Pleurisy with more or less effusion complicates pneumonia in about 50%. In at least 20%, heart complications are present. Pleural effusion of moderate degree is extremely apt to be overlooked during life. Needling is essential in doubtful cases and also to distinguish between serum and pus. The special bacterial agent should always be isolated. Among the commoner complications of pneumonia is empyema. In encapsulated empyema following pneumonia, a positive diagnosis is sometimes extremely difficult. Other means failing to prove the presence of pus, an exploratory operation should be done. In consequence of the toxemia or pneumonic septicemia, cardiac exhaustion may ensue without any marked histologic changes in either of the valves or the myocardium. Acute endocarditis is present in about 10% of the cases of pneumonia. It differs from other varieties: (1) in that three fourths of the cases are ulcerative; (2) that women show a higher incidence than men in the proportion of 2 to 1; (3) that the aortic cusps are more commonly involved than the mitral. Pneumococcus endocarditis generally prevents the occurrence of the crisis. Pericarditis is a more frequent complication than endocarditis. Meningitis may be associated with endocarditis or occur independently as a complication, but this is comparatively rare. It can be diagnosed only by the presence of such features as bradycardia, paralyses and neuroretinitis, or, in the absence of definite symptoms, by lumbar puncture.

We are indebted to Norris for the observation that acute nephritis probably occurs in about 7% of pneumonic infections. The writer has elsewhere shown that chronic nephritis is frequently found at autopsies in cases of pneumonia (70% of the cases at the Philadelphia Hospital), so that may be regarded as one of the commonest foregoing diseases.

### PNEUMONIA: DIAGNOSIS.

DR. AUGUSTUS A. ESHNER: In the majority of cases the diagnosis of pneumonia is easy. With a history of exposure to cold, followed by chill, fever, pain in the chest, dyspnea, rapid, shallow breathing, irritative cough, viscid mucoid hemorrhagic sputum, labial herpes, pneumonia will suggest itself, and the diagnosis will be confirmed by physical examination. Difficulty in the recognition of pneumonia will arise principally in atypical cases. Error is to be avoided by constant vigilance, with frequent physical exploration. Among the disorders from which pneumonia requires to be differentiated are acute pleurisy, pulmonary tuberculosis, bronchopneumonia, congestion of the lungs, infarction, abscess, gangrene, bronchiectasis, actinomycosis, syphilis, malignant disease, pericardial effusion, meningitis, typhoid fever.

SURGICAL COMPLICATIONS AND THEIR TREATMENT.

DR. CHARLES F. NASSAU: Pneumonia is not wholly a medical disease, as is generally believed. With enormous effusion removal by operation is the only proper course. Careful attention should be given to the cardiac condition. In a true empyema the treatment is clear: Incision, with or without resection of the rib, and drainage. Abscess or gangrene of the lung is one of the most difficult propositions confronting the medical man and surgeon. The treatment of either consists in rib resection and the insertion of a drainage tube. There is a sentiment against tapping suppurative collections in the pericardium, and I believe it is very much safer to make a small rib resection, expose the pericardium, when a needle can be introduced with comparative safety. In sixteen years I have seen very few cases of arthritis complicating pneumonia. It affects chiefly the knee and occurs most frequently in children. Absolute diagnosis rests solely upon bacteriological examination of the joint fluid. When the pain in pneumonia is referred to the abdomen, the pain and tenderness may be as pronounced as in acute abdominal disease. Diagnosis is so difficult that laparotomy may be done.

MEDICAL TREATMENT OF PNEUMONIA.

ARTHUR NEWLIN, M.D.: The mortality of pneumonia is maintained at 20% or over, death or recovery occurring usually, not so much as the result of inefficient or successful treatment, but in direct proportion to the individual's innate power to combat his infection. On account of the constant presence of pneumococcus in the normal individual it behooves us to avoid those things that reduce our natural resisting powers. Pneumonia patients should be isolated when possible. Two chief ends to be sought are the preservation of the patient's bodily strength and the maintenance of his personal comfort. Local measures, such as cupping or strapping, are used for the control of pain. The use of baths is not advised in adults, but hot baths in children are frequently of value. Dyspnea and cyanosis are better controlled by cold air than by any other means. Cold-air treatment has met with very good results. Milk remains the staple diet for pneumonia patients. The intestinal tract should be cleansed by calomel and salines. Such expectorants as creosote and ammonium chloride are rarely necessary; respiratory stimulants, such as strychnine, atropine and aromatic spirits of ammonia, are useful. They should be administered as occasion indicates. Phlebotomy has its use when the consolidated lung offers a mechanical obstruction to the pulmonary circulation. The circulatory system offers the best opportunity for the display of judgment in the administration of drugs. For the cardiac weakness which results from fatigue and toxemia, such stimulants as strychnine, digitalis, aromatic spirits of ammonia, caffeine, atropine and camphor may be used. Of these, strychnine and camphor are probably the best. Alcohol and digitalis are sometimes of use. Although there are objections to alcohol, yet in the aged and to those addicted to the use of the drug it may be used with benefit. Digitalis is better given hypodermically, and of its preparations preference is given to the fat-free standardized tincture. For lowered blood pressure, rapid pulse and tympanites, adrenalin, hypodermically, after the method of Gibson and Forcheimer, may be employed; its dose is 1 ccm. of a 1:1,000 solution.

Strophanthin is a drug that has come into vogue in the past two years. It is a powerful cardiac stimulant and is given intravenously in milligram doses. Such a dose shall not be repeated within twenty-four hours. Vaccine and serum therapy has as yet not proved to be efficacious in the treatment of pneumonia. The treatment should be one of conservatism, relying upon fresh air, various local measures and the ability to give the right drug at the right moment with the avoidance of routine administration.

DISCUSSION.

DR. HENRY D. JUMP: Blood pressure estimated in the prognosis and treatment of pneumonia I believe to be of far more value than the estimation of the respiratory rate. As has been pointed out, there is at a certain time in the toxic condition of pneumonia a lowered blood pressure accompanied by an accelerated pulse which indicates a grave prognosis. This has seemed to me to offer a very distinct indication for therapeutic measures, and I am surprised that the observation has not attracted more attention in the treatment of pneumonia. Associated with this lowered tension and accelerated pulse we have, as a rule, a tympanites due to vasomotor paresis of vessels of the splanchnic. If this vasomotor paresis goes on to the greatest extent, the body becomes bled into its own vessels and active interference is called for, as pointed out by Dr. Hare.

DR. J. NORMAN HENRY: I have had satisfactory results with the use of quinine administered hypodermatically and the administration of salt solution by hypodermoclysis. I have only recently tabulated my results and have not yet published them. In sixty-five cases of croupous pneumonia in the Pennsylvania Hospital I have had ten deaths, and some of these cases were moribund at the time the treatment was begun.

DR. HOBART A. HARE: I do not think Dr. Henry gives his treatment a fair show when he includes the cases that were moribund. The remarks upon these cases emphasize the important point than in the vast majority of instances pneumonia is not a primary frank disease. To ascertain the value of any line of treatment in pneumonia we would have to have statistics covering hundreds of cases and divide them up into innumerable groups. The matter of the lowered arterial pressure and accelerated pulse-rate is one of the greatest importance in that it tells you not only that danger is pending, but tells you far ahead of the time.

## NATIONAL CONFEDERATION OF STATE MEDICAL EXAMINING AND LICENSING BOARDS.

TWENTY-FIRST ANNUAL CONVENTION, HELD AT THE CONGRESS HOTEL, CHICAGO, ILL., FEB. 28, 1911.

THE PRESIDENT, DR. JOSEPH C. GUERNSEY, Philadelphia in the chair.

An address of welcome was delivered by DR. GEORGE W. WEBSTER, Chicago, which was responded to by DR. LEE H. SMITH, Buffalo.

PRESIDENT GUERNSEY delivered an address on medical licensure.

FLEXNER REPORT.

DR. W. J. MEANS, chairman, Columbus, Ohio, presented the report of the committee on the recommendations contained in Mr. Flexner's paper of last year, and stated that they concerned subjects which had been frequently presented and discussed at meetings of the National Confederation as well as of the Association of American Medical Colleges and of the Council on Medical Education. The committee recom-

mended that most careful consideration be given to all of the suggestions made, and that the three special recommendations, namely, regarding preliminary education, the refusal to recognize poorly equipped schools, and practical examinations, be adopted. The committee further recommended that a special vote of thanks be extended to Mr. Flexner for his most excellent paper.

The report was adopted.

STATE CONTROL OF MEDICAL COLLEGES.

DR. CHARLES WILLIAM DABNEY, president University of Cincinnati, said the vital interests of the general public in medical education furnished the strongest argument for the public support and control of medical colleges. The privately controlled colleges had generally lost sight of this and considered the interests of the profession and of the student the chief thing. In no other way did education as a whole touch the citizen more vitally than in the character of the medical training given in the colleges. The interest of the public in the kind of education given practitioners of medicine was the chief justification of public control of these institutions.

MR. ABRAHAM FLEXNER, New York City, discussed the subject of the duty of the state in the control of medical colleges.

HON. CHARLES ALLING, JR., Chicago, spoke of state support and control of medical education, and said that if the courts will sustain as a requirement for an examination a diploma from an institution of the standard raised by the Association of American Medical Colleges, they should for the same reason sustain a law providing that the degree of M.D. shall be given only by medical colleges in good standing with the State Board of Medical Registration and Examination, an official body created by and acting for the state to secure good medical service for all the people.

DR. ARTHUR DEAN BEVAN, Chicago, discussed the advantages to medical colleges of state control, and said that proper state control would mean a great deal and be of great advantage to the medical college which was doing good work and developing along scientific lines.

He believed that if every state board represented in the Confederation would attempt to get the profession of its own state back of it and made proper state control effective, that within five years American medicine could be placed in a position, with the exception of a very few states, where we could say that the American medical student was obtaining the proper medical education; that he had had a proper preliminary and medical education and some practical hospital experience before he was allowed to practice medicine.

SOME EVILS IN THE PRESENT SYSTEM OF MEDICAL EDUCATION.

DR. F. C. WAITE, Cleveland, Ohio, said the evils of over-production of graduates was self-evident. First, the field being overstocked, the average income and adequate living are reduced. Second, from this the result must be that the more able members of following generations will shun the profession and its recruits must come from the mediocre. The general tone of the profession will thereby diminish. Third, the average lack of income from reputable and ethical practice in the profession would lead many into quackery and thereby reduce the dignity and respectableness of the profession, and would divert the tendencies of able young men from the profession.

The following papers were also read and discussed: "Would it Add to the Efficiency of Medical Education to have All Teachers Receive a Compensation Commensurate with their Labors and have a Larger Number Devote their Entire Time to Teaching than now Obtains, and Could this be Accomplished if Aid were Rendered by the State?" by Dr. Frank Winders, Columbus, Ohio; "Could Examining and Licensing Boards Enforce the Laws Regulating the Practice of Medicine and the Requirements of the Boards More Efficiently, if Medical Education were under State Control?" by Dr. Edward Cranch, Erie, Pa.; "If Medical Colleges were under State Control, would the Medical Profession be More Uniformly and Efficiently Educated and Trained than by the Present System?" by Dr. Royal S. Copeland, New York City; "Some Thoughts on the Supervision of Medical Colleges and the Conducting of State Examinations," by Dr. James A. Egan, Springfield, Ill.

The following officers were elected: President, Dr. Charles A. Tuttle, New Haven, Conn.; First Vice-President, Dr. James A. Egan, Springfield, Ill.; Second Vice-President, Dr. A. B. Brown, New Orleans, La.; Secretary-Treasurer, Dr. George H. Matson, Columbus, Ohio; Executive Council: Dr. N. R. Coleman, Columbus, Ohio, chairman; Dr. Charles H. Cook, Natick, Mass.; Dr. Joseph C. Guernsey, Philadelphia, Pa.; Dr. W. Scott Nay, Underhill, Vt.; Dr. James A. Duncan, Toledo, Ohio.

Chicago was selected as the place for holding the next annual meeting of the Confederation.

## Book Review.

*Urgent Surgery.* By FELIX LEJARS, Professeur Agrégé à la Faculté de Médecine de Paris; Chirurgien de l'Hôpital Saint Antoine; Membre de la Société de Chirurgie. Translated from the sixth French edition by WILLIAM S. DICKIE, F.R.C.S., Surgeon North Riding Infirmary, Middlesbrough; Consulting Surgeon, Middlesbrough Union Infirmary; Consulting Surgeon, Eston Hospital. With 20 full-page plates and 994 illustrations, of which 602 are are drawn by DR. E. DALEINE and A. LEUBA, and 217 are from original photographs. Vol. II. The Genito-Urinary Organs, the Rectum and Anus, the Strangulated Hernias, the Extremities. New York: William Wood & Co. 1910.

Volume II of Lejars' important work deals with the genito-urinary organs, the rectum and anus, strangulated hernia, the extremities and other important topics which he has not discussed in Volume I. Our remarks some months ago on the value of Volume I apply equally to Volume II. The book is truly a discourse on operative surgery mainly, and the topics are admirably presented. The excellence of the text and illustrations consists mainly in the brevity of the writing, the admirable selection of methods chosen and the illuminating nature of the cases. It is a forceful and satisfying production. An extended criticism does not seem necessary here, for, beyond the method of presentation, there is little in the work that is new. The two volumes form together a book of reference for the busy general surgeon, and add one more to our already large collection of similar works.

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## REPORT OF THE MASSACHUSETTS STATE BOARD OF HEALTH FOR 1909.

The forty-first annual report of the State Board of Health of Massachusetts for the year ended Nov. 30, 1909, has but just made its appearance, owing to delay in the printer's office. It is a bulky volume and contains a large amount of interesting and detailed information. The year which it covers represents essentially the first year of Dr. Mark W. Richardson's secretaryship of the board.

The introductory general report comments on the principal activities of the board during 1909, on the slaughtering of neat cattle, sheep and swine, on its investigation relative to the treatment of rabies, on its work with reference to water supply and sewerage, on its supervision of the business of plumbing, on its inspection of foods and drugs, and on outbreaks of infectious disease. Many of these topics are more extensively treated by special papers in the supplement which constitutes the greater part of the volume. Of particular interest is the report by Dr. Lovett on "The Occurrence of Infantile Paralysis in Massachusetts in 1909," which was published in the issue of the Journal for July 14, 1910. Dr. Gregg's report on the "Origin and Prevalence of Typhoid Fever in Boston in the Year 1909" concludes with the significant recommendation that "all persons who are accustomed or forced to travel into other parts of the country, especially to the South and to Canada, or into rural districts, where the chances of getting contaminated water, milk, shellfish or other articles of diet are many, and almost impossible to guard against, and all physicians, nurses, ward tenders and hospital employees, should receive prophylactic [antityphoid] inoculation." The statistical summaries of disease and mortality present comparative general reviews of the vital statistics of the state for 1908 and 1909. The total death-rate of Massachusetts for the former year was 16.55 per 1,000; for the latter, 16.16. The total number of deaths from consumption in 1907 was 4,771; in 1908, 4,445; in 1909, 4,393. The typhoid death-rate in this state per 10,000 inhabitants was in 1909 only 1.23, but even this is a figure which in the future should be still further reduced.

The report of the board and its several departments not only describes the extent and variety of the important work accomplished, but is itself a valuable contribution to medical literature.

## THE STATUS OF ANTI-VIVISECTION.

The occurrence this week in Boston of so-called anti-vivisection meetings and of an anti-vivisection exhibit at Tremont Temple calls renewed attention to the persistent activity and zeal of certain misguided though well-intentioned persons in their efforts to hamper and if possible check the employment of animal experimentation in medical research. This demonstration immediately follows one of a similar nature in New York, to which we referred in notes in the two preceding issues of the Journal, and which was attended by an attempt to secure the passage at Albany of anti-vivisection legislation. It is of interest to examine some of the methods by which such campaigns are conducted, even though their nature and the qualifications of those engaged in them do not rouse serious apprehension of their success.

The anti-vivisection exhibit, announced as having "accomplished wonders for the cause wherever held," reflects with approximate accuracy the mental state of its promoters, being an admixture of misapprehension, misrepresentation and hyperbolic emotionalism. It is arranged and intended as a chamber of horrors, and is really a very distressing place for any one of good feelings to visit. It does not in the least resemble the so-called "halls of agony" of modern medical schools. The displays in this exhibit seem to fall under three classes. First, there are the pictures and models representing an animal, usually a dog, always unanesthetized, gagged and stretched writhing on a rack of inquisitorial design, extensively mutilated, and undergoing further torture at the hands of a satanic professor to the delight of a benchful of

degenerate medical students. "Isn't it awful?" said one shocked and kindly old gentlemen, contemplating the scene; "you wouldn't think they could do such things, but —" in a burst of inference and conviction — "the doctors are all like that." Such an instance and remark illustrate precisely the really criminal and dangerous method by which the finest emotions of the mind are played upon, exploited and perverted to serve the purpose of a particular cause. The imaginations of the anti-vivisectionists are far more diabolic than those of the most inhuman experimenter they depict. If half of all they conjure up were true, everybody would desire the restriction of animal experimentation. Their intellectual error lies in the misinterpretation of what they may have seen or read. An uninformed person might similarly construe surgical appliances and apparatus as instruments and engines of torture and depict the orthopedic ward of a hospital as a "hell chamber of atrocity."

To anti-vivisectionists the word "experiment" is equivalent to "malicious and cruel procedures on living creatures, devised ingeniously to inflict the maximum of pain," which is supposed to be equivalent to the maximum of pleasure for the inflictors. Indeed, they do not hesitate to aver that doctors purposely practice such procedures on their patients "for the fun of it," and as examples they quote liberally from medical articles, which happen to contain the word "experimental," and which as prejudiced laymen they naturally misconstrue. Placards bearing such quotations and insinuations constitute the second class of displays in this exhibit. A single example must suffice. In Vol. cxxxv of the JOURNAL, pages 132 and 156, Dr. A. H. Wentworth reported "Some Experimental Work on Lumbar Puncture of the Subarachnoid Space." The anti-vivisectionist's version of this is, "Dr. Wentworth made forty-five vivisections, tapping the spinal canals of children, many of whom died!" Such is the interpretation put on some of the early work on one of our now common and beneficent means of diagnosis and treatment. Other similar misrepresentations are derived from sensational newspaper reports of scientific research or surgical procedure.

The third class of displays at the exhibit consists of pictures of those whose writings oppose, or are thought to indicate opposition to, animal vivisection; and of domestic animals performing heroic rescues of men and children or in circumstances of felicity as widely contrasted as possible with their depicted torments above described. This part of the exhibit was a geunine relief to any one who before the other cases has already "supp'd full of horrors."

Of the part played in this campaign by the much-heralded Dr. Snow, little need be said. In the published correspondence to which we referred in the issue of the JOURNAL for March 9, Dr. Ewing, of New York, has satisfactorily answered his statements and appraised his standing, as Dr. Keen, of Philadelphia, previously had done. In his lecture at Tremont Temple on March 13, he declared that "it has never been definitely proved that a germ is the cause of any disease; that wherever diphtheria antitoxin has been introduced, the mortality from diphtheria has risen; and that doctors who knew how could perfectly well cure the worst cases of diphtheria before the days of antitoxin." Such remarks are sufficient to indicate that Dr. Snow has never progressed beyond the views of fifty years ago. They would be insulting if they were not laughable. By the use of such assertions he has simply exposed his own cause, and, as Dr. Ewing has said, withdrawn himself "from the range of scientific criticism and the serious consideration of all sensible people."

The result of the present anti-vivisection demonstration in Boston should be to discredit rather than advance "the cause" with all except the untutored whose good emotions may be played on by the unjustifiable appeals made to them. The anti-vivisectionists are more to be pitied than feared, for they are genuinely deluded. Sometimes, however, such fanatics do succeed temporarily in blocking the course of human progress. They should, therefore, be watched by the medical profession, treated always with tolerance and courtesy, and answered with the unanswerable arguments of fact. For against scientific truth no fallacy or misrepresentation can ultimately prevail.

## POLIOMYELITIS IN THE UNITED STATES IN 1910.

A WEEKLY report of the United States Public Health and Marine-Hospital Service, published on March 3, contains an interesting table summarizing the cases and deaths of poliomyelitis reported in this country during the year 1910. The greatest number of each was in Pennsylvania, where there were 1,097 cases and 172 deaths. In Iowa there were 638 cases and 161 deaths; in Massachusetts, 588 cases. The number of deaths in Massachusetts is not given. Pre-

sumably these were the three states in which the epidemics of this disease were most severe, though it must be remembered that the incompleteness, unreliability or absence of statistics in some states prevents accurate comparison. Apparently the epidemic was most continuous in Iowa, for this is the only state from which cases and deaths were reported for every month of the year. The maximum number of cases in any month was 378 in September in Pennsylvania; the maximum number of deaths, 64, in the same month and the same state. The maximum number of cases in any month in the entire Union was 1,146 in September; the maximum number of deaths, 182, in August. The total number of cases and deaths of poliomyelitis in the United States during the calendar year was 5,093 and 825 respectively, a mortality of about 13.75%.

## DR. IRVING FISHER'S REPORT ON NATIONAL VITALITY.

In an editorial on "Inaccuracy of Vital Statistics in the United States," on page 167 of the issue of the JOURNAL for Feb. 2, we referred to an article by Mr. Lawrence Irwell, of Buffalo, criticising certain figures and statements in two recent papers by Professor Fisher printed in bulletins of the Committee of One Hundred on National Health. Mr. Irwell has now published, in the issue of *The Lancet-Clinic* for Feb. 18, a further "Examination of Prof. Irving Fisher's Report on National Vitality," in which he makes a more extended comparison of Fisher's statistics with those from other sources, and also devotes some attention to "problems connected with heredity" and to Christian Science. It is unfortunate that there seems a slight suggestion of personal animus in Mr. Irwell's paper, which impairs to some extent the effect of its conclusions. Many of its positions, nevertheless, seem well taken, for argument at any rate; and it illustrates, like his original article, "the uncertainties involved in vital statistics and their interpretation, and the extreme caution which should be observed in making or accepting any conclusions deduced from them."

## ANCIENT AND MODERN FOOD ADULTERATION.

In a recent address before the Boston Scientific Society, Mr. H. B. Smith, chief of the Boston Food and Drug Laboratory of the United States Department of Agriculture, is reported to have called attention to the extensive adulteration of cheap candy with arsenic, which is used as an ingredient of the shellac or varnish with which such candy is often coated. Some samples of this varnish, used in Boston, are said to have contained 0.13% of arsenic. Mr. Smith cited a number of other instances of violation of pure food and drug laws. The adulteration of food he declared to be as old as history. In Pliny's time, the Neapolitan bakers mixed white earth with their flour and then sold the bread by weight. Punishment of such malefactors was sometimes more rigorous than in our day. In Germany a medieval falsifier of Rhine wine was condemned to drink a gallon of his own vintage, from which he died. Since the passage of our own Food and Drugs Act, the Department of Agriculture has secured seven hundred and thirty convictions under its provisions, and though the practice of adulteration has been checked, it is not yet extinct. Perhaps it is a pity that such drastic punishments as that of the German wine-grower are no longer permissible.

## MEDICAL NOTES.

A MEDICAL DEGREE FOR EMPEROR WILLIAM. — Report from Berlin states that the University of Prague has recently conferred an honorary medical degree on the German emperor.

CHOLERA AT HONOLULU. — During the week ending March 11, 7 new cases and 6 deaths of Asiatic cholera were reported at Honolulu, making a total of 26 cases and 21 deaths since the outbreak of the epidemic there on Feb. 24.

FOOT AND MOUTH DISEASE IN ENGLAND. — It is reported from London that there has recently been an outbreak of foot and mouth disease among livestock in Surrey.

ENDOWMENT OF A CHAIR OF EUGENICS. — Report from London states that the late Sir Francis Galton bequeathed a sum equivalent to $225,000 for the establishment of a chair of eugenics at the University of London.

SOME MEDICAL PROVERBS. —In a recently published advertising medical almanac are several items that seem more than usually humorous. In a series of aphorisms and modified proverbs are the following:

"The patient must trust his doctor, but it is a poor rule that works both ways."

"It is significant that doctor and debtor have the same abbreviation — 'Dr.'"

"No man is a hero to his valet, and no woman an angel to her physician."

"It's an ill wind that blows the doctor much good."

A Somnarium in Touraine. — Report from Paris describes the recent establishment in Touraine of a somnarium, or institution for the treatment of the functional neuroses and psychoses by sleep. Its purpose is to afford an asylum of absolute quiet and rest to which patients may go for a period of temporary oblivion. The extent to which hypnotic drugs will be employed in this "cure" is not stated.

A Fourth State of Matter. — It is reported from London that in a recent lecture before the Royal Institution Professor Bragg, of Leeds University, advanced the hypothesis that there may be a fourth state of matter, in which the corpuscles or electrons, which are equivalent to the $\beta$-rays of radium, behave like the molecules of gases. By this theory may possibly be explained certain phenomena of light and other forms of radiation or emanation.

Public Health and Commercial Prosperity. — In an address on March 11 before the Southern Commercial Congress, Surgeon-General Walter Wyman, of the United States Public Health and Marine-Hospital Service, emphasized the importance, in the economic and commercial development of any community, of securing favorable hygienic and sanitary conditions of life for the people. Preventive medicine must henceforth go hand in hand with all the enterprises of civilization. In the South, Dr. Wyman pointed out that the prevalence of typhoid fever, malaria and uncinariasis is a considerable obstacle to economic progress.

Field Practice for the Army Medical Corps. — Modern military maneuvers afford an opportunity not only for the trial of new engines of war, but for the training and practice in the field of the army medical corps. In connection with the present mobilization of United States troops along the Mexican frontier, it is announced that there will be established two base hospitals, four ambulance hospitals and fourteen regimental hospitals. In addition, it is reported that the hospital ship *Solace* will be ordered to co-operate with the land forces.

Medical Discoveries Resulting from the Spanish War. — In a recent speech at Washington, D. C., President Taft is reported to have said that "the discoveries made by American physicians, and particularly army surgeons, during and as a result of the Spanish War are alone enough to justify that war." Whether or no this be undue praise for the profession, it is true that the war and its consequences gave occasion and opportunity that might not otherwise have so soon occurred for the demonstration of certain facts in scientific medicine and for their successful application to problems of hygiene and medical prophylaxis. The beneficent results of war are generally those which are least expected.

Progress of the Plague in China. — Reports from China state that, owing to the rigorous medical and sanitary measures adopted, there has been a marked decrease in the number of cases of bubonic plague at Pekin, Tientsin, Tungcho and in the northern provinces of that country. At Pao-ting-fu there were reported 28 cases and 26 deaths. In southern China there has been an outbreak of the disease at Siokhe, a village west of the Lung Kiang River and fifty miles inland from Amoy. At Amoy, during the fortnight ending March 11, there are said to have been 8 deaths from smallpox and 8 from bubonic plague.

Amendment to the Owen Bill. — A recently issued bulletin (No. 49) of the Committee of One Hundred on National Health notes the introduction into the United States Senate on Feb. 2 of an amendment by Mr. Owen to his bill for establishing a department of public health. This amendment aims to meet some of the objections that have been made to this measure by denying to the proposed department or its officers the right to enter dwellings or to intervene in the exclusive functions of the health service in the several states unless invited to do so, and by providing that in examinations for positions in such department "no discrimination whatever shall be made against any applicant on account of any system or school of medicine" to which he may have attached himself. Presumably this amendment will come up for discussion with the original measure at some future session of Congress.

## BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, March 14, 1911, there were reported to the Board of Health of Boston

the following cases of acute infectious diseases: Diphtheria 28, scarlatina 51, typhoid fever 5, measles 130, smallpox 0, tuberculosis 68.

The death-rate of the reported deaths for the week ending March 14, 1911, was 21.12.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, March 11, 1911, was 249, against 248 the corresponding week of last year, showing an increase of 1 death, and making the death-rate for the week, 18.85. Of this number 120 were males and 129 were females; 237 were white and 12 colored; 149 were born in the United States, 96 in foreign countries and 4 unknown; 50 were of American parentage, 173 of foreign parentage and 26 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 30 cases and 6 deaths; scarlatina, 46 cases and 6 deaths; typhoid fever, 4 cases and 0 deaths; measles, 108 cases and 0 deaths; tuberculosis, 76 cases and 19 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 38, whooping cough 3, heart disease 28, bronchitis 2. There were 7 deaths from violent causes. The number of children who died under one year was 48; the number under five years, 72. The number of persons who died over sixty years of age was 79. The deaths in public institutions were 107.

Diphtheria at Brattleboro. — On March 6 it was reported that five cases of diphtheria had occurred at the Memorial Hospital, Brattleboro, Vt., as a result of which the entire hospital was placed under quarantine. Three of the patients were nurses.

Seizure of Candy Eggs in Boston. — On March 9 the United States deputy marshal seized in Boston 131 boxes, containing a total of 26,200 candy Easter eggs, consigned to this city by firms in New York and Pennsylvania. The reason for this seizure was that the eggs are alleged to be coated with powdered talcum, which is held to be in violation of the pure food law and to render them unfit for human consumption.

A Living Centenarian. — Mrs. Robert Goddard, of Durham, Me., celebrated on March 10 the supposed one hundred and first anniversary of her birth by attending a meeting of the Society of Friends, at which she is said to have made an address lasting twenty minutes. She is reported to be in excellent health, though somewhat deaf. She has been twice married, but has been a widow for the past thirty years.

Protection of Food Exposed for Sale. — It is announced that, beginning on March 20, the Boston Board of Health will enforce strictly a regulation, made over a year ago, requiring that all dealers in this city exposing meat, fish, vegetables, berries and other articles of food must keep such stock under cover to protect it from flies, dust and other sources of contamination.

The Milk Problem in Massachusetts. — The recently published monthly bulletin of the State Board of Health of Massachusetts for January, 1911, contains a paper by Dr. Mark W. Richardson on "The State Board of Health and its Relation to the Milk Problem in Massachusetts," read before the Connecticut Valley Breeders' Association on Jan. 24.

Purification of City Water Supplies. — At a recent meeting of the Biological Society of the Massachusetts Institute of Technology, Mr. H. W. Clark, chief chemist of the Massachusetts State Board of Health, described various methods that have been employed for filtering the water supply of large cities and reported his investigation of some of the means of purifying water by electricity. In Europe, especially in France, experiments have been made with the ultra-violet rays for this purpose, but the ideal method of water purification on a large scale remains yet to be devised.

## NEW YORK.

Conviction for Opium and Cocaine Smuggling. — William Rind, first officer of the American Line steamship *St. Paul*, has been convicted of smuggling into the country cocaine and opium, as well as jewelry, and sentenced by Judge Hough, in the United States Circuit Court, to a year's imprisonment. When he was arrested bills showing the purchase of 213 two-ounce bottles of cocaine and considerable amounts of opium were found in his possession.

Proposed Restriction of Animal Experimentation. — A hearing on the bills to restrict animal experimentation before the Senate judiciary committee and the Assembly Committee on Public Health was held at Albany on March 8. Drs. Simon Flexner, James Ewing and William H. Park, of New York, and Dr. Walter B. Cannon, of Boston, spoke in opposition to the measures, and Dr. Herbert Snow was among those who appeared in advocacy of them.

Two Centenarians. — Mendel Diamond died recently at the home of the Daughters of Jacob, New York, at the reputed age of one hundred and nine years and ten months. As he was born in Russia, however, this extreme age would seem open to considerable question.

The Rev. Cicero Barber, said to be the oldest clergyman in the country, died at his home in Fort Edward, N. Y., on March 10, the supposed one hundred and first anniversary of his birth. He had been twice married.

Proposed Board of Inebriety. — Last year the legislature passed and Mayor Gaynor approved a bill authorizing the establishment by the city authorities of a board of inebriety for the compulsory control of habitual drunkards, but until the present nothing has been done towards carrying its provisions into effect. At the meeting of the Board of Estimate and Apportionment on March 9, the matter was taken up at the request of the State Charities Aid Association, which secured the passage of the bill, and a committee consisting of the presidents of the boroughs of Manhattan and Richmond was appointed to report in regard to it.

Diphtheria in Webster. — The village of Webster, in Monroe County, recently had occasion to report an epidemic of diphtheria, and called on the State Department of Health for assistance. While the initial cause was not absolutely determined, the investigation showed that the chief factor in the spread of the disease in the township apparently was the rural mail-carrier. Commenting on this circumstance, the health commissioner draws special attention to the fact that it is frequently the unrecognized mild case which disseminates diphtheria in communities. Cases of what are thought to be simple sore throat are not kept under observation, no cultures are taken, and the children are allowed to go among their associates as usual.

Passage of Cold Storage Bill. — On March 8 the Assembly, by a vote of 101 to 35, passed the Brennan Cold Storage Bill. It provides that all food kept in cold storage shall be conspicuously labeled with the date on which it was stored, that the label shall remain upon the goods at the time of their removal from the warehouse, and that once placed on the market for sale, they shall never be returned for cold storage. The time within which foods can be kept shall not exceed six months, except by special permission of the state commissioner of health, who is clothed with ample powers of inspection and supervision of the warehouses. Warehousemen must furnish quarterly reports stating in itemized particulars the quantity of each foodstuff kept in storage; they shall be granted permission to keep no product longer than a year, and transfers of food from one refrigerating warehouse to another in evasion of the law are prohibited.

Columbia University and the Presbyterian Hospital. — A meeting, on the invitation of Mr. and Mrs. Clarence Mackay, was held at the residence of the hosts on March 1 to discuss the affiliation of Columbia University and the Presbyterian Hospital. President Butler of the university presided, and addresses were made by Drs. Blake, MacCallum, Janeway and Schlapp, representing Columbia and the hospital, and Prof. Graham Lusk, of the University and Bellevue Medical College. The eventual placing of the Columbia Medical School in juxtaposition to the Presbyterian Hospital was foreshadowed in the remarks of Dr. MacCallum, who, after stating that he and his associates had good reason to rejoice over the improved opportunity for teaching and research afforded by the alliance of the two institutions, said the real opportunity — the new opportunity — in New York lay, he was convinced, in the building of the new hospital and the new medical school under practically one roof. Throughout the German universities such a condition existed, and this was the essential point, the fusion of the two in a group of buildings on one plot of ground. The chief source of good work was the concentration of the combined efforts of every one — teachers, students and hospital workers. Professor Lusk gave a note of warning, remarking that the greatest danger likely to threaten the scheme of union would be the sense of omniscience on the part of three human factors in the alliance, — the physicians, the hospital trustees and the authorities of the university. It was through a lack of willingness to make concessions that great schemes not infrequently failed of success.

Mortality Statistics for February. — The weekly reports of the Health Department show that during the month of February the mortality in the city represented an annual death-rate of 16.60, as against 16.54 in January and 16.93 in February, 1910. Among the diseases in which there was an augmented fatality were the following: The weekly average of deaths from typhoid fever increased from 5.5 in January to 6.25 in

February; the weekly average from measles, from 7.5 to 14.5; from scarlet fever, from 14 to 20.5; from diphtheria and croup, from 29.75 to 31; from epidemic cerebrospinal meningitis, from 6 to 7.25; from pulmonary tuberculosis, from 186.25 to 193.5; from acute bronchitis, from 22.25 to 23.25; from bronchopneumonia, from 107.5 to 117.75; from diarrheal diseases, from 39 to 49.25; from diarrheals in children under five years old, from 36 to 44; from appendicitis and perityphlitis, from 11 to 21.25. Among the diseases in which there was a diminished mortality were the following: The weekly average of deaths from influenza declined from 35.25 to 24.25; from pneumonia, from 172.75 to 158; from apoplexy and softening of the brain, from 35.75 to 28.5; from organic heart diseases, from 184.5 to 182.75; from cirrhosis of the liver, from 23.25 to 22.25; from Bright's disease and acute nephritis, from 123.25 to 118.75; and from puerperal diseases, including septicemia, from 15.75 to 14.75. For the first time in a very long period there were no deaths from malarial fevers. Usually one or two deaths from this cause are reported each month. The corrected death-rate, excluding non-residents and infants under one week old, was 15.69.

Attempt to Secure Patrick's Release. — The Medico-Legal Society, through a special committee appointed for the purpose, is to make application to Governor Dix for the setting at liberty of Albert T. Patrick, now serving a life sentence for the alleged murder of William M. Rice. This committee, composed of Clark Bell, LL.D., ex-president of the Medico-Legal Society; Prof. H. S. Eckels, of Philadelphia, and Dr. J. J. Kindred, member of Congress-elect from the Queens District of New York City, has also been authorized by the society to appeal to the bar, the medical profession and the public press for co-operation in securing his release. At a meeting held late in 1910 the society, by unanimous vote, gave as its opinion that Patrick was innocent of the crime of which he had been convicted, this opinion being based on the reports of two committees of disinterested and competent scientific men who had made exhaustive investigations of the case. Both committees conducted original experiments, and each declared that the death of Rice was due to natural causes; was not due to chloroform poisoning, as alleged, and that the evidence of the valet Jones at the trial was false, incredible and contrary to scientific knowledge; finding that death by chloroform could not have been produced in the manner described by Jones. The body of Rice was embalmed, and, as is well known, the conviction of Patrick was based on the presumption of the state that the embalming fluid did not and could not enter the lungs of the deceased. One of the committees, however, by embalming, under the supervision of Professor Eckels, of the School of Embalming, Philadelphia, the cadaver of a man of about Rice's age and build by the right brachial artery, in the same manner that the body of Rice was shown on the trial to have been embalmed, positively demonstrated that the embalming fluid did enter the lungs.

## Current Literature.

### Medical Record.

March 4, 1911.

1. *Abbe, R. *Resection of the Posterior Roots of Spinal Nerves to Relieve Pain, Pain Reflex, Athetosis and Spastic Paralysis: Dana's Operation.*
2. Morgan, W. G. *The Diagnosis of and the Feeding in Gastric Ulcer.*
3. Dickinson, G. K. *Appendicitis and Its Moving Pathology.*
4. Olesen, R. *Vaccination in the Philippine Islands.*
5. Bangs, L. B. *Bilateral Nephrolithiasis; Left Nephrolithotomy.*
6. Dawbarn, R. H. M. *Short Talks with My Students and Others; Being Random Suggestions for the Younger Practitioners.*

1. Abbe gives a history of the Dana operation — resection of the posterior spinal nerve roots — since its conception in 1888. The idea is to relieve pain by destroying the sensory tract (through ascending degeneration) into the spinal cord. The writer reports five cases operated upon by him — two of uncomplicated neuritis, two of spastic paralysis and one of sarcoma of the axilla. He suggests the possibility of using this operation in cases of tabes with severe crises and in spasmodic wry-neck. [L. D. C.]

### New York Medical Journal.

March 4, 1911.

1. Rytina, A. G. *Report on the Treatment of Syphilis by Intravenous Injections of Salvarsan.*
2. Pollitzer, S. *Oily Suspensions of Salvarsan.*
3. Bishop, L. F. *Diet in Heart Disease and Arteriosclerosis.*
4. *Brav, A. *Are we in Danger of Trachoma?*
5. Crothers, T. D. *Forecasts of Medical Practice in the Future.*
6. Bartlett, W. *The Operative Technic in Acute Suppurative Appendicitis.*
7. Settel, N. *Acute Amygdalitis.*
8. Hays, H. *Prolonged Epistaxis Associated with Increased Vascular Tension.*
9. Knott, J. *Phrenology and Its Founder: The Claim of Franz Joseph Gall on the Homage of Scientific Posterity.*

4. Dr. Brav, medical director of the Philadelphia Trachoma Institute, contends that the danger from trachoma in the United States is much overestimated. This disease is not so contagious as is generally supposed, it is curable and only neglected cases have diminished vision. It never leads to total blindness in this country except, perhaps, among the Indians. Trachoma is on the decrease in the United States and our laws in regard to it need not be oppressive. [L. D. C.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

MARCH 4, 1911.

1. BRENNEMANN, J. *Purulent Infections of the Urinary Tract in Infancy.*
2. LERCHE, W. *The Esophagoscope in Removing Sharp Foreign Bodies from the Esophagus.*
3. *CRILE, G. W. *Graves' Disease: A New Principle of Operating Based on the Study of 352 Operations.*
4. CAFFREY, A. J. *Sodium Cacodylate in Syphilis.*
5. GOLDTHWAIT, J. E. *Plea for Greater Care in Arranging Patients on the Operating Table for the Prevention of the Common Post-operative Weak Back. The Presentation of an Apparatus for Holding the Lithotomy Position without Strain.*
6. ROGERS, C. C. *Intracranial Surgical Lesions in Children.*
7. FOX, H., AND TRIMBLE, W. B. *Experience with Salvarsan in the New York Skin and Cancer Hospital.*
8. CHITTENDEN, R. H. *General Chemical Aspect of Internal Secretion.*
9. MACCALLUM, W. G. *Internal Secretion of the Pancreas.*
10. BEEBE, S. P. *Present Knowledge of Thyroid Function.*
11. FRISSELL, L. F. *Report of a Case of Epidemic Anterior Poliomyelitis.*
12. KATZENSTEIN, B. *Simple Method for the Detection of Minute Quantities of Albumen in Urine.*
13. ANDERSON, J. F., AND FROST, W. H. *Abortive Cases of Poliomyelitis: An Experimental Demonstration of Specific Immune Bodies in the Blood Serum.*

3. Crile, in his excellent paper on Graves' disease, first analyzes the causes of the common post-operative hyperthyroidism and believes that we can reasonably exclude hemorrhage, infection, manipulating and cutting of the gland and, to a certain extent, the anesthetic *per se*, as causes of this condition. He believes, however, that the general anesthetic *per se* is a minor contributing factor and that local anesthesia *per se* is not such a factor. The psychic factor, therefore, remains as the principal cause of hyperthyroidism. To avoid this he has adopted the following technic: "The patient's reaction to small doses of morphine and scopolamine is ascertained. Daily inhalations, which are presumably for some medicinal purpose, but which are precise rehearsals of ether anesthesia, are practiced by the anesthetist. Ether is tentatively dropped on the inhaler along with the volatile oils, and the patient is cautiously, without her knowledge, tried out as to ether anesthesia — sometimes is completely anesthetized — all this in her own bed. The results are then studied and if the patient seems unsuited for the operation of excision, ligation is done as later described. If the central nervous system and the heart take the practice march well, the entire operation is then performed as follows: Long previous consent to an operation having been obtained, the patient is given morphine and scopolamine on the appointed morning, is kept absolutely quiet, is then gently anesthetized to the second stage, in bed as before, and is at once taken to the operating-room, where nitrous oxide is substituted for ether. The operative field is as completely cocainized as if no general anesthetic were being given. First the skin and fascia of the opposite side are incised about one inch. Through this incision, by means of a full-curved needle, the upper pole of the gland and all of the overlying tissue inclusive are firmly ligated. Then, in the gentlest possible manner, the opposite lobe is excised bloodlessly, absolutely avoiding traction on any uncocainized sensitive tissue precisely as if the patient were awake. After the operation, the utmost care is exercised to keep down to a minimum psychic and painful stimuli." For simple ligation the patient is made comfortable with morphine and scopolamine, told what is to be done, the skin fascia and muscles carefully cocainized and the poles ligated. Results with this technic have been extremely gratifying. The blocking of nerve impulses to the brain by cocainization is most important. The value of pole ligation, therefore, lies mainly in its breaking part of the nerve connection with the brain. It is possible that the cause of thyroid hypersecretion is a purely nervous reciprocal interaction between the thyroid and the brain. [E. H. R.]

THE ARCHIVES OF INTERNAL MEDICINE.

JANUARY, 1911.

1. *CHRISTIAN, H. A. *Observations on the Spirilla of Relapsing Fever.*
2. *PAGE, H. *Diphtheria Bacillus Carriers, with a Report of a Case Treated by Overriding the Infected Area with Staphylococcus Pyogenes Aureus.*
3. SWIFT, H. F., AND THRO, W. C. *A Study of Streptococci with the Complement-Fixation and Conglutination Reactions.*
4. *BYBEE, A., AND LORENZ, W. F. *A Report of Fifty Examinations of Cerebrospinal Fluid, with Special Reference to the Cell Count.*
5. OWEN, R. G. *Observations on Schuermann's Color Test for Syphilis.*
6. CRAIG, C. F. *Is Hemoglobinuric Fever a Manifestation of Malaria or a Disease Sui Generis?*
7. CROWDER, T. R. *A Study of the Ventilation of Sleeping Cars.*

1. Christian reports a case of relapsing fever in an immigrant. On the twelfth day of the disease the temperature rose abruptly and remained high for seventy-two hours, at the end of which fever terminated by a sharp crisis. During this period of pyrexia many spirilla were found in the blood and there was very rapid and very great enlargement of the spleen, causing intense pain. The spirilla were successfully inoculated into monkeys and white rats. In the monkeys the lesions found at autopsy were an accumulation of polynuclear leucocytes and endothelial cells in the sinusoids of the liver and a focal infiltration of the spleen with polynuclears.

2. Page, of Manila, writes an interesting paper on diphtheria carriers. He quotes the experience of Schiotz, of Copenhagen, who observed that a patient with staphylococcus sore throat placed in a diphtheria ward by error did not contract diphtheria; also that intercurrent attacks of staphylococcus sore throat cleaned up the Klebs-Loeffler bacilli in a few diphtheria convalescents. On the theory that the staphylococcus was the cause of immunity and also of cure, Schiotz inoculated six diphtheria carriers with staphylococci with complete success. The writer reports the case of a diphtheria carrier cured by overriding the infected area with staphylococcus pyogenes aureus. The patient's throat was sprayed with inoculated bouillon every two hours during the day. After two days a negative culture was obtained — the first since the disappearance of clinical symptoms eleven weeks before. Shortly before this treatment was instituted the patient complained of paresthesiæ and a test of her blood serum showed that she was manufacturing practically no antitoxin to neutralize the toxin constantly being elaborated in her throat. Page intended to give her weekly protective doses of antitoxin, but the elimination of the bacilli by the staphylococcus made this unnecessary. The writer concludes that pure culture of staphylococcus pyogenes aureus sprayed into the throat is capable of destroying the Klebs-Loeffler bacillus within seventy-two hours. The method is harmless and is indicated in all cases of diphtheria carriers. [See p. 169 of this volume of the JOURNAL.]

4. Bybee and Lorenz report on an elaborate study of the cerebrospinal fluid of fifty cases. They find the counting chamber the best method for examination of the cells. In their hands, all of forty clinically and cytologically positive cases of general paralysis of the insane gave a positive cell-chamber count, and in thirty-eight of these forty Noguchi's butyric acid test was positive. [L. D. C.]

THE LANCET.

FEB. 11, 1911.

1. SHAW, T. C. *An Address on the Clinical Aspects of Emotion and Action.*
2. EDRIDGE-GREEN, F. W. *Hunterian Lectures on Color Vision and Color Blindness. Lecture II.*
3. *OLIVER, T. *The Pathology and Treatment of Injuries Caused by Electricity.*
4. *CROWE, H. W. *An Experimental Investigation into the Question of the Possibility of Modifying the Effect of an Inoculation of Tuberculin by Combining with it a Local Anesthetic.*
5. *LEIPOLDT, C. L. *Some Remarks on Pantopon Anesthesia.*

6. Warner, N. S. H. *A New Method of Administering Nitrous Oxide, with or without Oxygen, for Prolonged Dental Operations.*

3. Oliver discusses the pathology of electric shocks and burns as well as the cause of death in such conditions. He presents several illustrative cases with a brief note on treatment.

4. Crowe endeavors to throw light on the question as to whether the inoculation of tuberculin produces its effect in any degree by stimulating afferent nerve endings at the site of injection. He has carried on a series of experiments by injecting tuberculin along with a solution of cocaine. He concludes that if cocaine be thus used there is a distinct difference in the response to the inoculation of tuberculin, the proof of this resting on the form of opsonic curve following such doses as compared with doses with which no tuberculin was given. He believes that there is a possibility that tuberculin does produce part of its effect by stimulating the central nervous system, and that such stimulation may take place at the site of inoculation.

5. Leipoldt reports his results with the use of "pantopon" in place of scopolamine-morphine as a preliminary to general anesthesia. "Pantopon" is a combination of twenty of the alkaloids of opium. [J. B. H.]

## British Medical Journal.

### Feb. 11, 1911.

1. *Smith, E. *Remarks on the Choice of a Diuretic.*
2. Goodall, E. W. *On Some Points Connected with the Serum Treatment of Diphtheria.*
3. Clarke, J. M. *The Argyll-Robertson Sign in Cerebral and Spinal Syphilis.*
4. *Pringle, A. M. N. *Tuberculin Dispensaries.*
5. Edridge-Green, F. W. *The Hunterian Lectures on Color Vision and Color Blindness.*
6. Boyce, R. *The History of Yellow Fever in West Africa.*

1. In a brief way Smith takes up the various diuretics and their uses under different conditions. He outlines the general principles of treatment in renal edema, acute and chronic, and in cardiac edema. He mentions tincture of cantharides as of great value in obstinate cases of cardiac dropsy.

4. Pringle believes that tuberculin therapy has not yet reached a stage where it would be safe to establish tuberculin dispensaries for such consumptives who cannot go to sanatoria. In this belief he is in accord with the majority of observers except Wilkinson. [J. B. H.]

## Deutsche Medizinische Wochenschrift. No. 6.

### Feb. 9, 1911.

1. v. Tabora, D. *The Diagnosis and Treatment of Secretory Disorders of the Stomach. (Clinical Lecture.)*
2. *Holmgren, L. *A New Method for Determining the Free HCl in Gastric Juice.*
3. *Forlanini, C. *The Respiratory Function of the Lung Healed by Artificial Pneumothorax, and again Expanded after Treatment.*
4. Henck, W., and Jaffe, J. *Further Communications on Ehrlich's Diozydiamidoarsenobenzol.*
5. Glaser. *Anogon, a New Mercury Preparation for the Treatment of Syphilis.*
6. Kuznitzky, E. *A Double Canula for Intravenous Injection.*
7. Schroen, F. *On the Remarks of J. Traube on the Diagnosis of Syphilis in No. 5 of this Volume of this Journal.*
8. Seiffert, G. *Reply to J. Traube's "Diagnosis of Syphilis."*
9. Henser, K. *A Case of Tubercular Warts and Tuberculous Lymphangitis Caused by Bovine Tubercle Bacilli.*
10. Bab, M. *The Treatment of Skin Diseases by Opsonins.*
11. Deutschmann, R. *The Treatment of Detachment of the Retina.*
12. Friedeberg, J. *Contribution to the Medical Treatment of Bronchial Asthma.*
13. Schlesinger, E. *Air Pessary for Hemorrhoids and Anal Prolapse.*
14. Oppenheimer, E. H. *A Pressure Eye Shield.*
15. Schlenk, F. *A New Vibratory and Massage Apparatus.*

2. Holmgren has found that if an acid fluid is dropped on an absorbing surface such as filter paper the water extends further from the central point than the acid. Thus by use of Congo red paper he has worked out a method of determining the amount of free acid in gastric contents by the radius of the acid reacting circle. His results from this method have been very uniform. The value of the test is that only a drop of stomach contents is necessary.

3. Forlanini has followed two cases that have recovered from artificial pneumothorax as a cure for tuberculosis. Although these cases are too few upon which to base any definite conclusions, he found that the lung did not return to its former capacity. Also, he found that the length of time of the pneumothorax affected the ability of the lung to expand again. The amount of scar from the tubercular process also plays an important rôle. Therefore, he advises further study of the question and considers that the most favorable cases for this treatment in regard to the end results on the lung are cases with small processes in which the pneumothorax will only have to be kept up a short time. [C. F., Jr.]

## Münchener Medizinische Wochenschrift. No. 5.

### Jan. 31, 1911.

1. Kopp, C. *Experiences in Treatment with Salvarsan.*
2. Treupel, G., and Levi, A. *The Clinical Test of Salvarsan.* (To be concluded.)
3. *Baisch. *Syphilitic Pemphigus of the Newborn.*
4. Stühmer, A. *Our Technic of Intravenous Injection of Salvarsan.*
5. Ehret, H. *The Estimation of the Diastolic Blood Pressure by Palpating the Cubital Artery.*
6. Roth, E. *Further Trial of Stroganoff's Treatment for Eclampsia.*
7. Hamburger, F. *Stiffness of the Arteries in Childhood.*
8. Hirschloff, L. *Rest Exercises and Apparatus Therefor.*
9. Palier, E. *The Transmutation of Staphylococcus Aureus into Staphylococcus Albus.*
10. Diem. *A Case of Multiple Joint Inflammation following a Tuberculin Test by Injection.*
11. Zimmermann, R. *Two Cases of Laryngo-Esophageal Resection.*
12. Rieger, E. *Attempted Suicide with Bromural.*
13. v. Dessauer, E. *The New Therapeutic Spring at Wiesse.*
14. Diessl. *The Sodium Spring in Kochel.*
15. Gutberlet, W. *A New Nasal Douche.*
16. Eversbusch, O. *Josef Wolfsteiner.*
17. Chiari, H. *Teaching in Pathology in the United States.*

1. Baisch reports a case of syphilitic pemphigus in an infant. He injected the nursing mother with salvarsan and she inproved rapidly, but the child, after a few days, got worse. An injection was then given to the child and a prompt cure resulted. [G. C. S.]

### No. 6. Feb. 7, 1911.

1. Warburg, O. *Studies of the Process of Oxydation in Cells.*
2. Wilms. *Radical Cure of Femoral Hernia by Fascia Plastic.*
3. Leede, C. *Hemorrhage Produced in the Skin by Congestion as an Aid to Diagnosis in Scarlet Fever.*
4. *Rudolph, M. *White Pox.*
5. Moro, E. *Dermatitis Fibrinosa Faciei.*
6. Erben, F. *Sickness of Several Persons from Eating the Entrails of a Pig that had the Plague.*
7. Scheglmann, A. *Gastric Fever.*
8. Mayerhofer, A. *A Simple Bandage Splint for Fracture of the Upper or Lower Thigh.*
9. Levy, E. *Corrosion from Benzine when Evaporation is Prevented.*
10. Freund, E. *Sixty Ambulatory Cases Treated with Salvarsan.*
11. Koglowski, B. *The Technic of Preparing Salvarsan for Intramuscular Injection.*

12. Treupel, G., and Levi, A. *The Clinical Test of Salvarsan.* (Concluded.)
13. Uffenheimer, A. *Results of Two Years' Public Supervision of Infants.*
14. Freytag, G. *The Eye of the Chauffeur.*
15. Many Signers. *The Necessary Qualifications of Vision in a Chauffeur.*
16. Holzknecht, G. *Haudek's Symptom Complex of Penetrating Ulcer.*

4. Rudolph, from Brazil, describes a disease closely resembling smallpox in some respects, but differing from it in important particulars. Epidemics of a similar disease have been described by various observers in Africa. The white pox resembles smallpox in its onset and until the full development of the eruption. The pustules are whiter, are not umbilicated, are more superficial and do not cause a bad odor or serious secondary fever. The scars are few and flat. The mortality, even under most unfavorable conditions, is about 2½%. Vaccination confers immunity for only six months. [G. C. S.]

Berliner Klinische Wochenschrift. No. 7.

Feb. 13, 1911.

1. Schroeder, P. *The Treatment of Morphine Habitués.*
2. Schultz, J. H. *Serodiagnostic Examinations of a Case of Cystadenoma Hepatis.*
3. Zuelzer, G. *The Treatment of Acute Catarrh of the Upper Air Passages by Inhalation of Adrenalin Preparations.*
4. *Gantz, M., and Hertz, R. *The Albumin Reaction in Sputum, and Its Practical Value.*
5. Bálint, R., and Molnár, B. *Experimental Investigations Concerning the Reciprocal Effects of the Products of Internal Secretions.*
6. Geszti, J. *What Happens to the Tuberculin Produced in the Body?*
7. v. Torday, A. *The Results Obtained with Salvarsan.*
8. Schaefer, M. *The Left Handed in the Berlin Parish Schools.*
9. Trangott, R. *Experiences with a New Hypnotic (Adalin).*
10. Grüter, R., and Pohl, H. *The Formation of Oxygen Out of Different Solutions of Peroxide of Hydrogen by Means of Catalysis (Blood).*
11. Schwerin, H. *The Use of Ethyl Chloride for Short Narcosis.*
12. Boschán, F. *The Nature of the Engel-Turnau Urine Reaction.*

4. The authors feel that the chemical tests of the sputum have been neglected. Testing the sputum for albumin is easy, they find, and the results are, as far as they can estimate, constant. They regard this test as of especial value in making a diagnosis of early tuberculosis. They feel confident that this is a diagnostic aid in respiratory disturbances, worthy and capable of wide application in medical practice. The authors describe their technic. [J. L. H.]

Deutsches Archiv für Klinische Medizin. Band 101.

Heft 3–4. December, 1910.

1. *Grafe, E. *Investigations on Metabolism and Loss of Strength in Fever.*
2. *Skoonjakoff, A. *The Question of Extramedullary Blood Formation in Posthemorrhagic Anemias.*
3. v. Körösy, K. *Studies on the Frequency of the Pulse and Respiration: A Medico-Statistical Investigation.*
4. *Jerusalem, E. *The Changes in the Gastric Mucous Membrane in Acute Infectious Diseases.*
5. *Oppenheimer, H. *The Early Diagnosis of Gastric Cancer by Means of the Tryptophane Test and a New Test with Acetic Acid.*
6. Grandauer, K. *The Inhibitory Effect of Psychic Influences on the Secretion of the Human Stomach and Its Importance in the Diagnostic Value of the Test Meal.*
7. Schlayer and Takayasu. *Investigations on the Function of Diseased Kidneys in Man.*
8. Wenckebach, K. F. *A Decisive Frequency of the Heart in Parozysmal Tachycardia.*
9. Aschoff, L. *Remarks on the Work of Schlæpfer.*

1. In a long article, Grafe reports his investigations on the results of the study of metabolism in acute infectious diseases. He considers that in addition to the increased heat production there is also an injury to the mechanism controlling the heat-regulating centers. He considers that the carbohydrates play by far the most important part in preserving the weight of patients with acute febrile disease, as by far the most heat is formed by their combustion, and if there is not an excess of this food the nitrogenous elements of the body are burnt and weight and strength lost.

2. Skoonjakoff has shown by experiments on rabbits that in anemia following hemorrhage blood formation occurs in the spleen and slightly in the liver. The same condition has been shown in toxic anemias by other authors. This extramedullary blood formation only comes on after a few weeks to a few months.

4. Jerusalem found upon histological examination of the stomach in cases that died during the course of acute infectious fevers certain changes in all cases except in whooping cough. The lesion usually consisted of invasion of the interglandular tissue with cells of the lymphocytic series and fibroblasts. He does not consider that it is safe to conclude that these lesions are the cause of the gastric symptoms occurring in acute infections. Also, it seems strange that the lesions should be the same in the different diseases.

5. Oppenheimer gives the technic of the tryptophane test for gastric cancer and also a new test with 3% acetic acid. Both of these tests are not infallible, but he considers that they are of considerable value in making an early diagnosis. [C. F., Jr.]

Die Therapie der Gegenwart.

January, 1911.

1. Goldscheider, A. *Gymnastics in Private Practice.*
2. *Schmidt, A. *The Treatment of Bronchitis and Allied Conditions with Dry Hot Air.*
3. Pfaundler, M. *Some Remarks on the Feeding of Healthy Infants.*
4. Förster, O. *The Operative Treatment of Spastic Paralysis by Resection of the Posterior Spinal Nerve Roots.*
5. Küttner, H. *Results of Operative Treatment in Diseases of the Stomach.*
6. Krönig. *Methods of Treatment of Hemorrhage in Obstetrics and Gynecology.*
7. Politzer, A. *A New Modification of My Method of Applying the Eustachian Ear Trumpet.*
8. Laqueur, A. *The Therapeutic Use of High-Frequency Currents.*

2. Schmidt gives an interesting account of his experience with dry hot air for inspiration in respiratory affections. This was first suggested, he says, by the relative immunity which workers in lime-kilns had to tuberculosis. He first experimented on rabbits and later pursued his investigations on clinical material. He finds this treatment most effective in simple catarrhal chronic conditions of the larynx and bronchi, useful in emphysema and bronchiectasis, of uncertain value in asthma and pulmonary tuberculosis. [L. D. C.]

Il Policlinico.

January, 1911.

Medical Section.

1. Tramonti, E. *A Case of Hematomyelia from Trauma of the Cervical Cord. A Clinical and Pathological Study.*
2. Catola, G. *A Case of Acute Myelitis of Ascending Type with a Special Bacteriological Report.*
3. *Ghedini, G. *Influenzal Serositis.*
4. Fulci, F. *A Case of Primary Multiple Malignant Lymphomata of the Jejunum.*

3. Ghedini, of Genoa, writes an exhaustive paper on serositis due to the influenza bacillus. He goes deeply into the literature of the subject and reports seven cases

from his own clinic. He finds that influenzal serositis may be acute or chronic, primary or secondary, plastic or exudative. Pleuritis is a good deal more common than peritonitis. Effusion is purulent as often as it is serofibrinous. The writer obtained pure cultures of B. influenzæ from the blood in six of his cases, and from the spleen in the seventh case. [L. D. C.]

SURGICAL SECTION.

1. *Curcio, A. *Sutures, Arteriovenous Anastomoses, and Vascular Transplantations.*
2. Splendore, A. *Note on Some Frambœsic Affections Observed in Brazil.*
3. Cignozzi, O. *Some Congenital Cysts of the Neck of Branchial and Parabranchial Origin.* (To be continued.)

1. From extensive experimental and histologic studies in vascular surgery, Curcio concludes that arterial and venous suture should always succeed, that transplantation of veins into arteries is the ideal treatment of aneurysm, and that arteriovenous anastomosis is a useful procedure if practiced early. [R. M. G.]

## Miscellany.

### REPORT OF THE COMMITTEE OF THE AMERICAN NEUROLOGICAL ASSOCIATION APPOINTED TO INQUIRE INTO THE OCCURRENCE OF MENTAL DISEASE AMONG PERSONS EMPLOYED BY TRANSPORTATION COMPANIES, MADE TO THE ASSOCIATION AT THE MEETING IN WASHINGTON, MAY, 1910.

The committee appointed to inquire into the occurrence of mental disease among persons employed by transportation companies at the meeting of the American Neurological Association at Washington in 1907 make the following report:

We have made special inquiry as to the occurrence of general paralysis of the insane among such employees, because the statistics are more readily accessible, because it most frequently attacks men in the full vigor of their activity, because its onset is insidious and it invariably leads to profound mental deterioration, with marked loss of memory and failure of judgment and decision. If there be a considerable amount of general paralysis among such employees, it is obvious that this alone is a source of danger, from which the public should be protected. An investigation into the occurrence of other diseases, such as the other forms of insanity, epilepsy, arteriosclerosis, etc., would demand much longer investigation, and would add merely cumulative evidence.

We wish here to express our thanks to the various superintendents of hospitals for the insane in New England, New York and Illinois; to Dr. Gregory, of the psychopathic ward at Bellevue Hospital, New York, and to Dr. Dewey, of the Institutions Registration Department in Boston, for their co-operation and efforts, without which our researches would be far less complete.[1]

An attempt was made to discover whether any accidents had occurred as a result of the mental disease, but in very many cases it was impossible to get information. Several of the superintendents kindly wrote making inquiry about every case, but most of the letters were returned unopened and they received very few replies.

As a result of these investigations, therefore, the committee has come to the following conclusions:

A considerable number of cases of general paresis and other forms of mental disease are to be found among railway employees.

I. Out of 5,832 commitments, 60 were of railway employees (over 1%).

II. Out of 1,905 male paretics seen in city clinics, 40 were railway employees (nearly 4%).

III. Out of 2,083 paretics at present in hospitals for the insane, 102 were railway employees (nearly 5%).

IV. The examining physician for two railway companies has noted in four years, among the employees of these companies, 26 cases of mental disease, 15 of which were cases of paresis.

We have been unable to discover any fatal accidents due to the mental incompetence of such employees, but we have learned of several accidents, unattended with loss of life, due to this cause, and several cases in which accidents have been narrowly averted. It is obvious that it is a source of danger to the community to keep persons suffering from paresis and other mental diseases in responsible positions in the railway or marine service. Such danger can be averted or at least diminished by the examination, at repeated and regular intervals, of all employees holding responsible positions.

Philip Coombs Knapp,
Charles L. Dana,
Hugh T. Patrick,
Frank R. Fry,
*Committee.*

[1] The original report gives detailed statistics in tabular form.

### EDUCATION IN "SEX HYGIENE."

The problem of so-called "sex education" for children is one which, in common with those of eugenics and venereal disease, has been receiving considerable attention of late, particularly before various women's clubs and charitable organizations. Doubtless it is desirable that so important a question should be thoroughly discussed, and it is certainly well that not only the advantages but also the possible risks of such indiscriminate education should be considered. In this connection, some very sane comments were made by Dr. Richard C. Cabot in an address on March 4 before the 1915 Conference of Women's Clubs in Boston. A part of Dr. Cabot's address as reported in the daily press was as follows:

"In connection with the tremendous problem of sex hygiene, we are in danger of seizing upon a panacea that will do us more harm than good — the teaching of sex hygiene in the schools. Although doctors and parents should know about these matters, they shouldn't spin that knowl-

edge out to children. The temptation to do this as a preventive measure is great, but the process is not wise. I don't believe in teaching maternity through natural history, and sex hygiene through biology. It is the influence of pure personalities whom we meet that keeps us straight, not fear nor knowledge. Hygiene has no word to say why people should behave themselves. It is obviously the field of the educator and moralist. We often believe that disease is the result of sin. There's nothing in it.

"Whether people who misbehave shall contract disease depends on the money, cleverness or luck of the individual. The sin isn't different, whether you suffer for it or not. There is no good science behind the idea that hygiene can guide us in this matter. It is bad morals to reason so.

"If you lie, you may get insomnia thinking about it, and insomnia hurts the health. Don't steal or you may get into jail, and jails are unsanitary and so injurious to the constitution. These things are no sillier than to say 'behave yourself or you may suffer for your misdemeanors.'

"We must not go too hastily about this business. It requires careful deliberation. The problem is as old as humanity. There's no reason to think we are worse off than humanity has ever been before. Indeed, there is some reason for thinking we are better off."

Dr. Cabot's remarks and opinions seem particularly pertinent and worthy of consideration. Because a thing is true, it does not necessarily follow that it should be immediately taught to every one, and in the teaching of sex hygiene in the schools there is opportunity for injudicious enthusiasts to do harm. Neither hygiene nor biology can be expected wholly to solve the problems of ethics. Knowledge of facts, though valuable in itself, is not always enough to determine right conduct; and in the sex education of children, it should be remembered that there are times when the letter, even of truth, killeth.

## PHYSICIANS AS PRISON WARDENS.

A COMMUNICATION from Dr. Beverley Robinson, of New York, calls attention to the great responsibilities of wardens in penal institutions and the consequent importance of securing for these positions persons with the requisite qualifications of knowledge, tact, judgment, forbearance and kindliness. Dr. Robinson believes that physicians are most likely to possess these qualities, and, therefore, advocates their appointment to such positions, which should be made attractive to men of experience and of the most desirable type by increased salary and long tenure of office. In such an executive situation, a physician could probably do more for the health and well-being of prisoners than could a lay warden or than he himself could in a purely professional subordinate position. The feasibility of securing suitable physicians for these posts might be an open question.

# Correspondence.

## A LETTER FROM BERMUDA.

HOTEL HAMILTON, BERMUDA,
March 6, 1911.

*Mr. Editor:* As little, if anything, pertaining to these Islands has appeared in the JOURNAL of late years, it may be of interest to some of your readers to have their attention called to the advantages and disadvantages of this place as a winter resort for people from "the States."

That the islands are popular is evident from the fact that between nine and ten thousand visitors come here annually, and many return year after year. Seven hundred miles from New York, or less than forty-eight hours' sail, brings one to this land that never knows frost nor snow and ice, but has perpetual vegetation.

Leaving New England early in February, as did the writer, in a howling blizzard, the contrast was striking as well as deceptive. Here the sun was shining brightly, the air was rather sultry, the birds were singing, the flowers were in bloom, the strawberries were ripe, many people were dressed in white and it seemed as if we had suddenly entered a land of perpetual summer.

The deception, however, was of short duration, as within twenty-four hours the wind had changed from the south to the northwest and many of the recent arrivals were shivering with cold. Our usual winter clothing was in demand and has been worn ever since. It is a mistake to change one's clothing for lighter weight until compelled to do so. Many visitors from the North fail to realize the altered conditions under which they are placed here, and hence do not take proper precautions against taking cold. Colds are very prevalent here among the newcomers, and the cause is not far to seek. Accustomed as the Americans are to warm houses at any and all times of the year, they come here in the cold season to hotels and boarding houses that have little or no means of heating the rooms. Too often they are also induced by the marked change in the weather from that left behind them a few days previously to put on lighter clothing, as they see others have done. The result is that in a short time many of them are the victims of a good old-fashioned New England cold, or possibly of something worse, as a "bowel complaint," etc. About this time they begin to growl about the so-called "warm climate" and wish themselves in a place where they could turn on the heat and be comfortable. Such has been the writer's experience in Southern California, in Florida, in Italy, in Egypt and in Bermuda.

The English people suffer less in this respect than the Americans from the fact that they have always lived in houses in which the temperature is seldom over 60° F., while in our houses it is usually about 70°. Ignoring the question as to the wisdom of the Americans keeping their houses too warm, the facts are as above stated, and they are to be reckoned with in traveling in the warmer climates.

The winter temperature of Bermuda is about 60°, varying from 50° to 70°. That would seem warm and comfortable to a New Englander, but one's comfort does not depend solely upon temperature. Dampness and rains are important factors — and they are very commonly in evidence here. Warm in the sun, cool in the shade, is the rule here, as it is in most warm climates, and visitors from the colder regions must be guided and guarded accordingly in the way of clothing and warm rooms.

The visitor's experience justified him in asserting in the most positive terms that all hotels and boarding houses, wherever located, which care for the patronage of the American public should have facilities of some sort for heating the sleeping and living rooms at any and all times. Young people who spend most of their time in the open air and lead an active life may not require warm rooms, but the middle-aged and elderly people frequently wish to retire to the quiet and seclusion of their own apartments and they naturally want them to be safe and comfortable, as they are accustomed to have them at home. They are

able and willing to pay for these comforts and will be satisfied with nothing less.

The Flagler hotels on the east coast of Florida, and the Plant system on the west, realizing the importance of this need, have provided facilities for heating their houses, to the very great satisfaction and comfort of their patrons. Some of the first-class hotels in Southern California have also swung into line by providing heat for their guests. The sooner the hotels in Bermuda furnish like facilities, the better will it be in all respects for every one interested. Sick folks, as a rule, are better off at home than anywhere else. Neither climate nor change in locality will compensate for the comforts of home. Those people who are only half sick and can put up with things as they find them, and need to get away from business or other tiresome conditions, are often benefited by a trip. Convalescents and those who are the victims of "brain fag" or nervous exhaustion might find Bermuda very agreeable for a few weeks, or perhaps months, between November and June. With proper precautions they would be enabled to spend a large part of their time in the open air. If unable to do that, then Bermuda is no place for them.

Tourists and tuberculosis are financially incompatible. The former are welcome here; the latter is not. The universal testimony that the victims of this infection do badly here is probably correct by reason of the dampness and cold, the former being in evidence at all times and the latter during the winter months. At all events, Bermuda is no place for that class of invalids under present conditions.

Rheumatism is found here, as it is in every place known to the writer. Dampness, especially when accompanied by cold, is not conducive to the comfort of rheumatics. A warm, dry climate would seem to be the most favorable one for these people. Yet other factors than climate have much to do with the production of this widespread and troublesome affection. For a long time the writer has entertained the idea that the diet is often the chief factor in causing rheumatism, and that if we ever conquer the disease, it will be largely accomplished along these lines. Many people keep themselves fairly free from rheumatism by carefully regulating their diet for long periods of time, whereas otherwise they would be more or less disabled by the infection.

Typhoid fever prevails here to a certain extent, and any one having experienced the affectionate habits of the Bermuda flies can readily believe that they have something to do with the transmission of the disease. Sanitation is at a rather low ebb. Many of the inhabitants are poor and ignorant and do not trouble themselves about these things. Their salvation seems to rest largely upon their outdoor life.

The water supply of the Islands is peculiar from the fact that there are no springs or brooks of fresh water here. The Islands are formed largely of sandstone and limestone, which is so porous that it is impossible to sink wells below high tidewater level without their containing salt water. A few, however, are still in use, as in times of drought fresh water becomes very scarce and the rain water, which percolates through the thin layer of soil and the sandstone, does not readily mix with the sea water, thus answering very well for laundry and various other purposes. In time, however, this well water becomes brackish and is laxative in its effects upon man and beast.

The only fresh water here is rain water. It is obtained from the roofs and from artificial watersheds. The former are made of slabs of limestone, frequently whitewashed, and connected with tanks proportionate in size to the probable needs of the occupants of the premises.

The watershed is made by removing the thin layer of soil from the side of a hill, covering the underlying rock with cement, whitewashed frequently, and connecting it with a reservoir of the requisite capacity. Every house is required by law to have a roof suitable for shedding the rain water, and a tank for the storage of the same.

Properly cared for, this arrangement gives pure water; and, of course, is free from any contamination by sewage, etc. Prolonged droughts give rise to much inconvenience and even suffering from the scarcity of pure water, to say nothing of the harm to the crops that depend so much upon a sufficient supply of water.

From the fact that "rain fell on two hundred and twelve days in 1909, and the official total measurement was 69.16 inches," it would seem possible with proper facilities to secure fresh water in sufficient quantities to last through any drought that is likely to occur. When the Boer prisoners were confined here, the government established plants for condensing sea water similar to those in use upon ocean steamers, but they are not used generally at present, the tank supply being sufficient for all ordinary seasons.

The scarcity of water precludes any system of drainage as a general rule, and house sanitation depends largely upon cesspools and dry closets.

The population of the Islands is about 19,000. Two thirds of the inhabitants are colored. While vital statistics are not as reliable as could be wished, yet the death-rate is stated to be 22 to the 1,000. Forty-two per cent of the mortality occurs in early childhood, largely among the colored people.

The method of disposing of the dead is peculiar, depending, of course, upon the conditions present. The soil here varies in depth from a few inches to a few feet, generally not over two or three. For this reason vaults, or chambers, 10 or 12 feet deep, are cut in the soft sandstone of sufficient length and width to receive the caskets.

The well-to-do people own and control their lots, but many are unable to do this, by reason of the expense. By paying a small sum ($5.00) a body can be placed in a vault, which is sealed up and not allowed to be opened again for one year. Every year, however, a body can be put into that vault, so long as there is sufficient space. As the coffins are simple and made of the cheapest wood, and as the rock is very porous, the vaults are many years in being filled, even if they are ever full. They are never cleaned out, as is done in some of the vaults in some foreign cemeteries. The wells here are so few and so far removed from the cemeteries that there can be little danger of infection by the seepage of rain water.

While it may be a far cry from the cemetery to the police court, yet this rambling letter may well close with a brief account of a trial witnessed by the writer, which affords a good example of English thoroughness and commendable justice.

On account of jealousy, for which there was doubtless ample reason, a white woman attacked a colored one on the street, and, getting the worst of the scrimmage in the way of bites and scratches, she enters a suit against the colored woman for assault and battery. After hearing the testimony of the parties and their witnesses, the magistrate, realizing the partisan character of the same, of his own motion sent a constable to bring a carpenter into court as an impartial witness.

This man from the humbler walks of life had seen the fight, but knew neither party and told a simple, straightforward story, which impressed his disinterested hearers as being the truth.

From his complete and careful notes the magistrate reviewed the case in a most thorough manner, expressing his opinion of the evidence as given by different persons, and concluded by discharging the prisoners, giving his reasons clearly and distinctly for his action. The trial occupied several hours and was conducted in a most admirable manner throughout.

Imagine a magistrate in Massachusetts, of his own motion calling in an outside witness to clear up a mass of conflicting evidence; yet who can doubt for a moment the great value of such action as shown in the case above outlined. It would seem to a layman as if the American system of trials might well take a leaf from the English methods, thereby insuring more thorough procedures and more exact justice.

Bermuda is an interesting place to visit. Aside from its historical interest, there is much to see in the way of scenery; plants, flowers and vegetation strange to a northerner; the barracks and dockyards; the caves, the sea gardens, the aquarium, the "devil's hole," the peculiar rock formation and the action of the ocean thereon, etc. One of the islands, St. Georges, was headquarters for many of the blockade runners during the Civil War. Business was booming there for a time, but went to pieces, of course, with the Confederacy, leaving many of the people poorer than they were "before the war."

The chain of principal islands is about twenty-five miles

in extent, furnishing a hundred miles or more of pleasant rides, over fine roads for the most part, and in all directions. There are no street cars nor cars of any sort. Carriages are reasonable and taking care of visitors is the chief occupation of a large proportion of the people. The chief precaution for the newcomers to take is to keep warm, especially while riding, and not to be deceived by the sunshine, the perpetual foliage and the reflection that, as they are in a "warm climate," they need pay no attention to personal comfort as regards heat and cold.

Very truly yours,

GEORGE W. GAY, M.D.

## RELATIVE TO CLIMATE IN HAY FEVER.

BOSTON, March 10, 1911.

*Mr. Editor:* The writer, last summer, spent his vacation in California and the Canadian Rockies; for ten years he has been more or less bothered with hay fever, and at no place of the many where he has been, including mountains and sea resorts, has he ever found complete relief, although he has had his nose well operated upon and keeps himself in excellent health, until the past summer, when he spent most of the hay-fever season in Santa Barbara, Cal. Here he did not have a particle of trouble in any way; this is especially interesting, because there is no altitude at Santa Barbara, excepting back on the hills, and the air is very humid.

In the Canadian Rockies, at Laggan, at the most picturesque spot in America, Lake Louise, which is 5,600 feet above the sea-level, and where snowcapped mountains and glaciers are all around you, he found almost complete relief, but not the absolute ease and comfort that he did at Santa Barbara.

Dr. William H. Flint, who lives there, says that in his experience Santa Barbara is outside of the hay-fever belt; it would probably be more accurate to say that he does not see hay fever in Santa Barbara.

Very truly yours,

F. W. HORNBROOK, M.D.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, FEB. 25, 1911.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | 1,582 | 455 | Waltham | 7 | 0 |
| Chicago | 680 | 171 | Brookline | 10 | 1 |
| Philadelphia | — | — | Chicopee | 3 | 1 |
| St. Louis | — | — | Gloucester | 6 | — |
| Baltimore | — | — | Medford | 5 | 1 |
| Cleveland | — | — | North Adams | 8 | 2 |
| Buffalo | — | — | Northampton | 8 | 0 |
| Pittsburg | — | — | Beverly | 9 | 2 |
| Cincinnati | — | — | Revere | 3 | — |
| Milwaukee | — | — | Leominster | 5 | 1 |
| Washington | — | — | Attleboro | 5 | 1 |
| Providence | — | — | Westfield | 5 | 1 |
| Boston | 280 | 51 | Peabody | — | — |
| Worcester | 59 | 10 | Melrose | 0 | — |
| Fall River | 51 | 23 | Hyde Park | 3 | 0 |
| Lowell | 34 | 9 | Woburn | 4 | 2 |
| Cambridge | 40 | 10 | Newburyport | 8 | — |
| New Bedford | 41 | 19 | Gardner | 6 | 1 |
| Lynn | 24 | 7 | Marlboro | 3 | 0 |
| Springfield | 22 | 4 | Clinton | 5 | — |
| Lawrence | 29 | 10 | Milford | 6 | 1 |
| Somerville | 30 | 7 | Adams | 2 | 1 |
| Holyoke | 18 | 6 | Framingham | 1 | 0 |
| Brockton | 14 | 3 | Weymouth | — | — |
| Malden | 11 | 2 | Watertown | 2 | 0 |
| Haverhill | 13 | 1 | Southbridge | 2 | 1 |
| Salem | 18 | 5 | Plymouth | — | — |
| Newton | 10 | 3 | Webster | 1 | — |
| Fitchburg | 8 | — | Methuen | 3 | 1 |
| Taunton | 14 | 4 | Wakefield | — | — |
| Everett | 7 | 1 | Arlington | 3 | 1 |
| Quincy | 7 | 2 | Greenfield | 3 | — |
| Chelsea | 22 | 5 | Winthrop | 2 | — |
| Pittsfield | 5 | — | | | |

## APPOINTMENT.

PROF. THEOBALD SMITH has been appointed a member of the National Referee Board of Consulting Scientific Experts (of which Dr. Ira Remsen, president of Johns Hopkins University, is chairman), to fill the vacancy caused by the death of Prof. Christian A. Herter, of New York.

## SOCIETY NOTICES.

THE HARVEY SOCIETY.—On Saturday evening, April 1, at 8.30 o'clock, Dr. S. Weir Mitchell, of Philadelphia, will deliver the last lecture of the season at the New York Academy of Medicine. The title is: "A Lecture on William Harvey, the Discoverer of the Circulation of the Blood."

MIDDLETON GOLDSMITH LECTURE.—The Middleton Goldsmith Lecture of the New York Pathological Society will be delivered at the New York Academy of Medicine on Saturday evening, March 18, at 8.30 P.M., by Prof. Frank P. Underhill, of Yale University. Subject: "A Consideration of Some Chemical Transformations of Proteins and Their Possible Bearing on Problems in Pathology."

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A meeting of the society will be held in John Ware Hall, Medical Library Building, on Monday, March 20, 1911, at 8.15 P.M. Addresses: "The History of the Royal College of Physicians of London," Dr. Thomas McCrae. "Some Medical Gossip Pertaining to the Last Illness of Queen Anne of England," Dr. Charles G. Cumston. "Science at the Medieval Universities," Dr. James J. Walsh. Members of the Suffolk District Medical Society are cordially invited to attend.

ROBERT M. GREEN, M.D., *Secretary*,
78 Marlborough St.

NEW ENGLAND PEDIATRIC SOCIETY.—The fifteenth meeting will be held in Sprague Hall, Boston Medical Library, 8 The Fenway, on Saturday, March 25, 1911, at 8.15 P.M. The following papers will be read: (1) "A Case of Oxycephalus," Arthur Willard Fairbanks, M.D., Boston. (2) "Report and Consideration of Two Cases of Scurvy," Fred P. Webster, M.D., Portland, Me. (3) "The Value of Direct Inspection of the Larynx, Trachea and Bronchi in Children," D. Crosby Greene, Jr., M.D., Boston. (4) "A Directory for Wet Nurses; Its Experiences for One Year." Fritz B. Talbot, M.D., Boston. Light refreshments will be served after the meeting.

JOHN LOVETT MORSE, M.D., *President*. FRITZ B. TALBOT, M.D., *Secretary*.

MASSACHUSETTS GENERAL HOSPITAL, SKIN DEPARTMENT. MEETING CONCERNING THE USE OF SALVARSAN.—On Tuesday, March 28, 1911, at 11 o'clock in the morning, there will be held in the lower amphitheater of the Out-Patient Department of the Massachusetts General Hospital a special meeting, under the auspices of the Skin Department, concerning the new Ehrlich-Hata arsenical compound "Salvarsan." Dr. W. F. Boos will speak on the chemistry of the drug, Mr. Joseph Godsoe will demonstrate its actual preparation for injection, Dr. R. P. Towle will describe its clinical results and its applicability. Dr. F. S. Burns will demonstrate its intramuscular injection, and Dr. Hugh Cabot, the intravenous method. You are cordially invited to attend this meeting.

FREDERIC A. WASHBURN, M.D.,
*Resident Physician*.

## RECENT DEATHS.

HENRY PICKERING BOWDITCH, M.D., M.M.S.S., died in Jamaica Plain, March 13, 1911, aged seventy years.

DR. WILLIAM WHEELER HEWLETT, a prominent physician of Babylon, Long Island, N. Y., and former president of the Suffolk County Medical Society, died suddenly on March 5, at the age of sixty-three years. He was graduated from Bellevue Hospital Medical College in 1869.

DR. JOHN W. COE, JR., of New York, died from pneumonia, at the Presbyterian Hospital in that city, on March 6, in his thirty-ninth year. He was graduated from Johns Hopkins University in 1898, and at the time of his death was dermatologist to the Presbyterian Hospital.

DR. HOSIAS M. SCHIEMANN of New York, died at the Mount Sinai Hospital on March 10, in consequence of an elevator accident in January, which rendered necessary the amputation of his leg above the knee. He was a native of Russia, where he was graduated at Kasan in 1869, was forty-eight years of age, and had practiced in New York about four years. Previously he had for some years held a government position in Russia, but was obliged to leave that country on account of the persecution of the Jews.

## BOOKS AND PAMPHLETS RECEIVED.

Collected Papers. By the Staff of St. Mary's Hospital, Mayo Clinic, Rochester, Minn., 1908-1909. W. B. Saunders Co. 1911.

Diseases of Children for Nurses. By Robert S. McCombs, M.D. Second edition. W. B. Saunders Co. 1911.

JOHNS HOPKINS HOSPITAL LIBRARY



## Public Lecture.

# POPULAR FALLACIES ABOUT INSANITY.*

BY HENRY R. STEDMAN, M.D., BROOKLINE, MASS.

If we look at insanity from every point of view we must admit that there is no disease which is more dreadful and at the same time more far-reaching in its relations and its consequences. As if this were not enough in itself, it has been invested in the public mind with many needless terrors and misconceptions because of the extreme popular ignorance that prevails regarding its true nature and extent. Some of these I shall try to dispel.

### THE ALLEGED INCREASE OF INSANITY.

The familiar question, "Is not insanity increasing very fast?" which is raised by people in general and many physicians who have not informed themselves of the true situation, shows the general belief regarding the prevalence of the disease and, if we consider only the great accumulation of the insane in our hospitals, it is a natural one. According to the last complete United States census report (1905), the total number of the insane in institutions in this country on Dec. 31, 1903, was 151,151, and the number of hospitals, 328, while in 1890 the number of insane was 74,028 in 162 hospitals, an increase of more than 100% in the number of hospitals for the insane. Then also, in England, one individual in every 278 of the general population is insane, and very similar figures are reached in the more densely populated states of this country. Moreover, the mass of the mentally defective, from the nature of their disease, cannot be treated at home like most patients with physical maladies, but require care in large institutions, which are sadly in evidence in every section of the more populous states of the country. These conditions make great impression on the public mind and have led to the widespread belief that there is a great and rapid increase of this particular disease which far outstrips the growth of the general population. It is, nevertheless, a great mistake to draw the conclusion that the increase in the insane population of our hospitals necessarily indicates that the disease insanity is itself increasing. These accumulations are, in point of fact, only in small part due to an increase in the number of newly occurring cases which is the only true measure of the prevalence of a disease.

You will ask, "What, then, are the causes of these appalling aggregations of insane persons?" Many factors contribute:

1. Patients do not die of insanity itself, — except suicides and a very small number of cases which succumb to the exhaustion of acute delirious conditions, — and but a comparatively small proportion recover, the tendency of the disease being to become chronic — the mind deteriorating while the bodily condition holds good. Therefore, it happens that a far smaller number are discharged each year from our hospitals or die there than are admitted, and the result is a steady accumulation of chronic cases. This is plainly shown by the recent finding of the Massachusetts Board of Insanity that since 1880 the annual accumulation-rate of the insane in that state had increased five times as fast as the admission-rate of new cases.

2. At least three fourths of all admissions to our institutions for the insane are (*a*) chronic and incurable cases drawn from the reserve of insane patients in the community; (*b*) old hospital patients who, formerly discharged as improved, have been obliged to return through inability to adjust themselves to outside life; and (*c*) relapsed cases whose insanity has taken the form of repeated attacks from which they only temporarily recover.

3. More mental conditions are now called insanity than formerly and are so pronounced by physicians. We must, therefore, know just what insanity is before we can ascertain with some approach to accuracy the actual prevalence of the disease. This cannot be accomplished until we have a uniform and expert system of classifying the form of mental unsoundness in each case. Take senility, for example. The enfeebling of the mind and body in the aged which not a great many years ago would have been generally looked upon as a natural result of old age, an evidence of dotage and a condition which could and should be cared for at home, is now often regarded as a symptom of insanity sufficient to justify commitment to a hospital. Moreover, such cases are now thought to be the better for such special care; 19.71% of new admissions to the Massachusetts hospitals for the insane to-day are of persons over sixty years of age, which is double the percentage in 1880. Thus the admission of the aged, also, to hospitals for the insane has greatly increased their population without augmenting the amount of freshly occurring insanity.

4. The growing practice of placing the dependent insane under State care has led to the transfer of many patients to State hospitals from almshouses, who, though long insane, had not been up to that time so registered. Far from being new cases of insanity which contribute to the increase of the disease, they are patients of very long standing, now for the first time rightly labelled, who simply go to swell the number of chronic patients.

5. Under the more advanced modern methods the medical treatment given the insane in hospitals is of better quality, with the result that while they live longer and their mortality-rate is diminished, they accumulate faster.

6. The better management of public hospitals as well as the care afforded the inmates, the increased safeguards against improper commitment, etc., have greatly lessened popular prejudice and distrust and led people to entrust their relatives to public care much more willingly and freely.

7. The great growth of "flat-life" in the last

* Delivered in the Free Public Lecture Course on Medical Subjects at the Harvard Medical School, Feb. 2, 1908 (revised).

ten or fifteen years has, it is thought, had no small share in increasing the number of public insane. People living in such close quarters have neither the accommodation nor the privacy for retaining in their homes members of their families who are mentally afflicted.[1]

8. Wise legislation has, as the director of our last national census believes, accelerated the influx to the hospitals in many places by taking the incurable, criminal and epileptic insane and feeble-minded from the others and placing them in special institutions.

9. There have also been more complete returns of the existing insane to swell the reported number. Their enumeration becomes much more comprehensive with each succeeding census.

These facts show plainly that the increase in the number of insane patients cared for in institutions is by no means an index of the increase of insanity in the community, but far more nearly a measure of the frequency with which people nowadays resort to hospitals for the insane. In this connection the criticism of Lugaro, a master-mind on all questions relating to mental disease or defect, is very much to the point. In writing on the prevention of insanity in his work on "Modern Problems in Psychiatry," he cites facts to show "how unfounded is the pessimistic prejudice of those who, mistaking an increase of the numbers of persons under asylum treatment for a real increase in insanity, make statements calculated to alarm the public and accuse civilization of exacting from the human brain an excessive amount of activity."

But in order to obtain direct and positive data by which to ascertain whether this or any other disease is increasing, it is essential to know the proportion of *freshly occurring cases or first attacks* to the population at different periods. This is especially true of insanity and is now generally recognized by competent investigators familiar with the disease as the crucial test. Its neglect has vitiated much statistical work and has impaired the value of our national census.

This enumeration is made by calculating the annual number of *first admissions* to institutions for the insane, that is, the number of persons who have never before been in a hospital of the kind, and then comparing this with the number by which the general population has increased in the same year. By repeating this calculation each succeeding year we ought to be able to arrive at a fair estimate of the prevalence of the disease. Unfortunately first admissions do not always mean first attacks of the disease and the accounts given of previous residence in hospitals and the disease-history of most public patients (especially the foreign-born) are apt to be most unreliable. Another discrepancy appears in the fact that over 40% of these supposed new cases admitted for the first time have been insane for more than a year and are already chronic cases. First admissions, therefore, can only approximately represent the occurring insanity of a given year. In spite of these drawbacks, however, first admissions are the only true guide to follow, and when, as we hope, they are given in the future, the close analysis they require as a part of an improved system of statistics, will without doubt throw much light on this important social and statistical problem.

Information on this important point as it affects this country is very meager. The last United States census report (1905) contains many statistical tables and other interesting information relating to the insane of the country, but in an elaborate inquiry into the increase of insanity omits all reference to this vital factor of first admissions. Tables of first admissions are, it is true, published in the hospital reports of some of the States, but they are utterly inadequate as a basis for estimating the increase of occurring insanity in the whole country, and the annual proportion of these new cases to the general population nowhere has been computed so far as we can ascertain except in recent reports of the Massachusetts State Board of Insanity.

Dr. Copp, the executive officer of that board, in a recent paper on the subject, gives a chart covering a period of twenty-nine years ending in 1909, which shows the very wide divergence between the curves representing the accumulation of the insane and that for the admission of the newly occurring cases in the hospitals of that State. As a result of his investigations, he concludes that the rate of increase of insanity in proportion to the population is only "slight" and "not at all alarming." Unfortunately his statistics relate to a comparatively small section of the country and one in which the rate of immigration is nearly equal to the increase of population; where, also, from 42.14 to 46.26% of first admissions to the state hospitals are foreign born, "justifying the conclusion that foreign immigration tends to increase occurring insanity."

We must, therefore, turn to Great Britain, where the proportion of the insane to the population corresponds closely to ours, where the population is far more stable and where the question of the increase of insanity has been carefully studied for many years by competent investigators.

Fifteen years ago, D. Hack Tuke, the famous English alienist, after an exhaustive analysis of the various arguments and statistics bearing on the subject, particularly those relating to first admissions, announced that "statistical returns in England and Wales do not support the opinion that a distinctly larger number of persons in proportion to the population become insane than was formerly the case.[2]

The last annual report of the Board of Commissioners in Lunacy for Scotland which has 18,337 insane inhabitants, gives a table showing the proportion of pauper lunatics never previously registered per 100,000 of the population for each year from 1900, — when it was 50, — to 1909 inclusive, — when it was 43. "It will be seen," the report states, "that these figures show a persistent and substantial decrease throughout

[1] Jour. Roy. Statist. Soc., June, 1907, p. 234.

[2] Dict. Psychol. Medicine, p. 1196.

the last quinquenniad, and an examination of the figures on which they are founded shows, as in the case of the other tables, that the decrease is confined to no special county or district, but is spread over all parts of the country." The commissioners comment on the situation as follows: "In our forty-sixth annual report we had occasion to record for the first for nineteen years a fall in 1903 in the number of pauper patients in establishments in proportion to population. The results of the retrospect now (1910) submitted are such as to show that there is reason to believe that the year 1903 marked a true turning-point and that no permanent increase in the amount of registered insanity is likely to occur in future under present conditions beyond the almost inevitable rise due to increase of population, or such as may result from mere accumulation through a diminished rate of discharge."

In England and Wales the insane number 130,553. The statistical tables in the report of the Commissioners on Lunacy of those countries for 1910 show that the proportion of first admissions per 10,000 of the population has fallen from 5.76 in 1902 to 4.99 in 1910. These are very significant facts, but — as is pointed out — "this diminution in the rate of increase, although it has persisted for several years and corresponds to a similar diminution in Scotland and to some extent in Ireland, cannot be accepted as yet as positive evidence of an actual *decrease*. The social and economic causes leading to fluctuations extending over several years are too complex to be briefly stated, but the present variation probably gives more reason for hope that the high-water mark of insanity has been reached than any fluctuations of previous periods."

Finally, Humphrey, an English investigator and medallist of the Royal Statistical Society of London, a most competent expert and an eminent statistician, after a second elaborate and exhaustive study of the question after a lapse of seventeen years, feels justified in expressing "a decided opinion that there is no absolute proof of actual increase of occurring insanity in England and Wales," and his inquiry "further strengthens the conviction, expressed in the former paper, that the continued increase in the number and proportion of the registered and certified insane reported on from time to time by the Lunacy Commissioners is mainly, if not entirely, due (*a*) to changes in the degree and nature of mental unsoundness for which asylum treatment is considered necessary or desirable; and (*b*) to the marked decline in the rate of discharge (including deaths) from asylums; in fact, that this increase of the registered and certified insane" is due to causes of the same general nature as those that I have enumerated, and is "not really the result of increased prevalence of insanity as a physical disease." [3]

In short, extensive research by the most competent investigators with the aid of all the statistics and other sources of information that are available has thus far failed to reveal any appreciable increase of insanity that cannot be accounted for by increase of the population. It is, of course, possible that more precise data and more systematic and uniform classification based upon expert knowledge might modify this conclusion, but under present conditions there is certainly nothing to warrant the popular and in some quarters the professional alarm that is now felt over the terrible and incalculable increase of insanity that is supposed to exist.

[3] Jour. Roy. Statist. Soc., June, 1907.

### SOME "CAUSES" OF INSANITY.

Lectures to follow in this course will deal exclusively with the important and intricate subjects of causation and prevention, but there are a few aspects of the former which deserve mention here.

It is a common belief that a single circumstance, accident, shock, habit or tendency is the sole cause of a mental breakdown. We are asked what is "the" cause of a patient's insanity, as if but one factor were responsible for the condition. On the contrary, a number, a conspiracy of causes, have been at work in most cases. Disease-inheritance, poor nutrition and physique, hardship, poverty, alcohol, bodily disease, emotional strain, — especially anxiety, — exhaustion from physical or mental overwork, domestic troubles and misunderstandings, a succession of afflictions, mental conflicts, etc., combine in varying number and degree to produce the attack. For example, overwork in study is frequently given by relatives as a sole cause of an attack of mental disease in youths, while, in fact, it is almost never operative alone. Often anxiety over the expense of living and education, a bad heredity, poor nutrition, secluded habits, neglect of healthful exercise, recreation and association are factors without which the mental strain of close application to study could have been easily withstood.

Fright is popularly supposed to be a not infrequent cause of insanity, but in point of fact I have been unable to recall in my experience or the literature of the subject at my command more than a very few cases originating in this way. But while fright, shock or the accompanying stress only very rarely results in insanity, it is common enough as a cause of less profound and more purely nervous conditions, such as neurasthenia or "nervous exhaustion" (from railway accident, for example), hysteria, St. Vitus' dance, epileptiform seizures, etc. The same is true of any injury to the head which the patient may have had. This is frequently offered as the sole cause of cases of insanity, perhaps because of the fact that the same part of the body is involved in both, and some connection between the two is ignorantly supposed to exist. Without going into the reasons why this is seldom the case, the chief of which is the wide difference in the disease-processes of the two conditions, it is enough to say that only a very small proportion of cases of genuine insanity so originate,[4] while,

[4] Of 2,910 commitments to the Massachusetts State Hospitals during the year 1909, but 9 cases were classified as traumatic, i. e., due to injury.

on the other hand, head-injuries from falls, etc., are common occurrences.

There is also an ingrained but equally mistaken belief among people in general, especially womankind, that the climacteric or menopause is the principal cause of insanity, occurring between the ages of forty and fifty-five or thereabouts. Insanity is, to be sure, particularly prevalent in this decade, but not more so in women than in men. In fact, there are rather more men who become insane at that age than women. Competent opinion as to the baleful effects of the climacteric upon disease in general has, indeed, greatly altered in the last twenty-five years, and it is no longer looked upon as a time of life fraught with peril and difficulty. In insanity we should surely look deeper before ascribing to a single local physiological condition the importance of the entire upheaval.

Formerly, when less was known regarding the pathology of insanity, the physician too often confounded cause with effect, thereby spreading false impressions among the laity. A notable example of this tendency was the very general belief, which is still largely prevalent, that solitary sexual practices were directly responsible for mental breakdown in youth as a general rule, whereas the truth is that this enervating habit, when appearing in connection with an attack of insanity, is far oftener a symptom or result than a cause of the mental trouble and its importance as a cause of insanity is greatly exaggerated by people in general. Too often, also, the insane melancholiac freely accuses himself of disgraceful acts and sometimes even crimes which he never committed and are entirely foreign to his normal character and habits, but which some unthinking friend or neighbor is ready to believe and perhaps report as the cause of his breakdown.

Lest, however, the impression be left that insanity never has its origin in a single condition, a certain relatively small proportion of cases so arising must be mentioned. Paresis or general paralysis, whose newspaper term is "paralysis of the brain," and is frequently miscalled "softening of the brain," is in most cases the late result of a single toxic agent, syphilis, without which the disease would not occur. Typhoid fever, also, occasionally leaves the formerly strong and healthy young mind unhinged and sometimes irrevocably shattered. Influenza, pneumonia, scarlet fever, erysipelas of the head are now and then the direct and sole causes of mental disease. Alcohol may of itself produce a special form of insanity, and toxic conditions at childbirth are occasionally the direct and sole cause of puerperal delirium. Pellagrous insanity, also, is due solely to eating damaged maize.

### INSANITY NOT NECESSARILY HEREDITARY.

Faulty inheritance is such a potent element in mental disease that many people believe insanity to be always inherited from insane parents or other antecedents. It is surprising how general this belief is. Now, a bad family tendency of this kind may be shown in actual and marked insanity of certain members, while the rest are sound and strong and appear to have the normal amount of resistive power to disease, but this is a better inheritance than less distinct mental disease, more unsoundness and a low state of mental and bodily health in the family generally, in the forms, for example, of various nervous disorders, convulsions in childhood, low grades of mental capacity, bad habits and propensities, physical defects, a tendency to tuberculosis, etc., conditions from which insanity often springs. The fact is far too insufficiently recognized that "the factor that is directly inherited is not insanity, but an instability or disordered arrangement of nerve tissue which allows insanity to occur, and we must look for the heritable antecedents of insanity not alone in insanity, but in all maladies, mental and physical, which give evidence of undue irritability or disorder of the highest nerve arrangement." There are, it is true, certain forms of insanity to which inheritance gives a special stamp, but there are also many cases of mental disease in which no disease-heredity can be found and where the ancestry is apparently of sound and healthy stock. Paresis, for example, is an acquired disease which occurs very often in the robust and energetic in the prime and early middle of life. As regards this malady there is nothing worthy to be called proof that hereditary predisposition is a factor. It is nevertheless a progressive and fatal enfeeblement of the mind and body with marked insanity. Two hundred patients with this disease were admitted to the hospitals of Massachusetts, and one hundred and seventy-seven succumbed to it in the year 1909.

Dementia precox, the insanity of youth, which I shall describe later, the most common, the most important, the most baneful of all, usually springs from the soil of hereditary defect or instability, but in a fair proportion of cases variously estimated by different observers it may be simply acquired, i. e., occurring without any discoverable trace of insanity or allied disorder in the family history. This form of mental disease seldom appears after adolescence except as a second or still later attack, being practically peculiar to youth. In the last ten or more years it has been the subject of far more investigation than any other form of insanity, and an immense amount of work has been devoted to it. One result of this has been that it no longer holds the place that it once held as an exclusively hereditary disease. Many cases are found to have originated from exhaustion of the nervous and bodily strength through physical fatigue as the principal cause in persons of fairly good physique and average health. Rapidly growing youths or girls, particularly in the humbler stations of life, apprentices, clerks, train-hands, stable-boys, mill operatives, certain domestics, not infrequently succumb to the exhausting effects of hard physical labor combined with long hours, perhaps work "overtime," little sleep, insufficient food and, in consequence, disorder of nutrition. Insomnia and lassitude arise and mental break-

down follows, sometimes without the aid of any appreciable hereditary predisposition to insanity. If it should be present, this sad result is only the more rapid and more profound.

The fever of athletic competition has led many a delicate student, ignorant or careless of the laws of health, to such a depletion of his strength and vigor as to sap his mental and bodily stamina and thus to prepare the way for an attack of insanity. Nowadays there is no lack of incentive, training and apparatus for athletic effort; it is always close at hand and there is very little likelihood of poor physique and under-development occurring in the modern youth. The physical, moral and even mental advantages to the individual and the race resulting from athletic exercise have long been kept before us. Certain physical dangers following its abuse are, to be sure, gradually becoming recognized, but nowhere do we find proper appreciation of the influence of undue physical exercise as a factor in the production of mental breakdown in adolescence in the shape of dementia precox. I believe it to be of enough importance in itself to call for more general regulation, individualization and restriction of athletic exercise and competition than now prevails if we are to secure the best results in the hygienic protection and development of the youth of to-day.

### INSANITY AND THE MARRIAGE OF NEAR KIN.

The influence of heredity on disease is also responsible for the strong popular sentiment that exists in regard to the evil effects upon offspring of the marriage of near kin. This question has long been a battleground for the physician, biologist and sociologist, but it is now quite generally conceded, as a result of statistical analyses on a large scale, and the observations and arguments of acknowledged authorities, that the evil has been greatly exaggerated. Nevertheless it remains a common popular belief that insanity occurring in children of related parents, usually first cousins, is clearly due to the fact that they were of the same blood. In many minds this opinion is so deep-rooted that it cannot be dislodged. George Darwin's facts and figures, and Huth's exhaustive work on the marriage of near kin, not to mention the observations of Morselli, an authority on suicide, have had much to do with changing the old belief in the dire consequences of such marriages. The researches of Withington[1] are a valuable contribution to the question and show quite conclusively that the offspring of related parents are in no danger unless these parents are sharers in any family disease or tendency. Alienists of authority hold the same view, and although there are still exponents of the harm to follow from such marriages, the trend of recent opinion is decidedly in favor of our contention. To be sure, we occasionally hear of disastrous results in such cases in the shape of imbecile or otherwise defective children, but we are usually ignorant of their true family history as regards disease.

[1] Reference Hand Book Med. Sciences, vol. iii, p. 258.

It is, therefore, entirely safe and within the bounds of fact to say that marriage between cousins is only dangerous as regards insanity in descendents when they closely resemble each other in physique, in mind and general tendencies, or when there is an unmistakable taint of insanity in the common family. Otherwise no harm whatever is likely to come to the offspring of such a union under ordinary conditions.

### WHAT CONSTITUTES INSANITY.

The practical test of a person's insanity is not what he thinks but what he does. His fears, his promptings, his ideas are not insanity unless they are expressed in acts — in *conduct* endangering his safety, or prejudicial to his business success, his health or his family or social interests, or those of others. It is not enough that the mind alone be simply disordered. For example, a man in the full enjoyment of health may for most of his life entertain a fixed idea that his legs are made of glass and yet so long as he does not by speech or conduct let his belief affect his daily life, his business affairs or his attitude toward others, he cannot be considered insane. Should he, however, keep his bed for fear of breaking his legs if he should stand up, his insanity would be manifest. In fact, mental disorder without insanity is far from uncommon. "Psychasthenia," formerly known as neurasthenia, is often expressed in irresistible morbid fears of various kinds which the patient realizes are absurd, but of which he cannot rid himself. For example, fear of large open spaces, fear of dirt, of contamination from contact, etc., as well as doubts of various kinds. The trouble, in fact, was once classified as the "insanity of doubt." A lady, for example, experiences great agony of mind at the prospect of having to cross a large city square; a busy clergyman will not take a closed carriage even when caught in a storm because of the actual terror he experiences at being shut up in a small space and his desire to burst out of it; another washes his hands a great many times a day for fear that they may have touched some article or person carrying disease-germs. There are numbers of such persons who for their entire life, and others for a part of it, carry about with them such tormenting fears without disclosing them or allowing their dread to affect the performance of their usual duties or their attitude toward others, and no one is any the wiser as regards this mental state, for they are able to adjust themselves to all conditions of life. They act in harmony with their surroundings and society generally, and are, therefore, not insane, although suffering from a mental disorder. Occasionally, to be sure, some patient of this class is carried too far in his terror and becomes unsettled and even panic-stricken to such an extent as to do strange acts, neglect his business or to suffer in physical health and then to need medical care away from home for a time. These extreme cases have, during this stage, passed the border-line of sanity, although the trouble is of mild form and usually temporary. The fear of approaching insanity, due to ignorance of its mechanism, is

another mild, disordered, mental state which is rather common in sane people, usually during the anxiety attending or reaction following some distracting experience or season of nervous ill-health, especially in those who have once had an attack of mental disease or who can find signs of such disease in the family history. The dreaded attack only rarely follows such a mental state and as a rule we are safe in assuring such persons that the fear of insanity is by no means a sign of its approach.

Not only are these minor degrees of mental disorder that I have mentioned within the borders of sanity, but actual hallucinations, that is, sense-perceptions without any external object being present — a condition that is very common in actual insanity — are not always indications of insanity, especially when recognized by the mind as hallucinations, and occasionally not even then. Instances are not rare of persons who firmly believed in the reality of some single hallucination while having no other trace of mental disease, and preserving all their correctness and vigor of mind. Martin Luther always believed that the devil visited him in his study and in his bed, that he saw him with the bodily eye, and heard him with the bodily ear. Dr. Johnson heard the voice of his mother calling to him, "Sam! Sam!" though several miles away. Rapp, one of Napoleon's generals, says that on entering the Emperor's cabinet on one occasion he found him so abstracted and self-absorbed that he feared he was ill. When, at last, he attracted the Emperor's attention, he told him to look up. "Do you not see her?" he said. "She is before you bright and brilliant. She has never abandoned me. I have seen her on every great occasion. She tells me to go on and she is always the sign of good fortune." Cromwell was fond of relating in the days of his power that, when at school, a woman of gigantic height drew aside the curtains of his bed and announced to him his future greatness. Lord Castlereagh, while visiting a friend in early life, saw at night, before going to sleep, the vision of a radiant child with a glory circling his head. He saw it again many years afterwards in the House of Commons.[6]

Similar examples might be multiplied indefinitely, but enough has been said to show clearly that disorder of mind, including both disorder of thought and feeling, may exist without insanity. In actual insanity mental disorder cannot exist alone; disorder of *conduct* must also be present. As Mercier puts it, "Their co-existence implies and necessitates disorder of those highest nerve processes which actuate the one and accompany the other. . . . It is the conduct, the way in which the individual adapts himself in ways large and small to the circumstances which surround him, that is the essential factor in insanity and gives it its whole significance. . . . In short, if we discover a mental disorder and find that it has no influence upon conduct, we cannot regard it as an evidence of insanity."[7]

[6] Ray's Medical Jurisprudence.
[7] Mercier: Sanity and Insanity, p. 104, etc.

There is an absurd and favorite saying that every one is more or less insane because all of us know that there is no man who at times is not unnecessarily depressed, excited or "queer," or loses his control without adequate cause. Such a popular belief is very unfortunate because it is utterly erroneous and confuses the public mind on a most serious problem. We might as well say that every one is more or less of a physical invalid because no one is perfectly sound in all his organs and other parts of his body under all conditions and at all times; in other words, that no one is physically perfect. To say also that every one is insane on "some point" is equally absurd. It is as ridiculous as to say (to again quote Mercier[8]) that everyone's digestion is disordered on some point. No doubt there are for every man circumstances to which he cannot adjust himself, just as there are things which he cannot digest, but the fact that he cannot always adjust himself to his circumstances is of itself no more proof of insanity than the fact that he cannot digest tenpenny nails is of itself a proof of disordered digestion.

### DISTURBED PATIENTS.

It is still quite generally believed that there are large numbers of highly excited and turbulent patients, or "raving maniacs," in our institutions. This is a remnant of the old opinion that insanity always meant an entire dethronement of reason and self-control and consequent frenzy. It will surprise any who may still hold such a belief to know that, at the Taunton State Hospital in Massachusetts, for example, there were, at the time of writing, but 57 out of the entire number of 945 inmates who are classed as excited, 97 as dangerous and 35 who are both excited and dangerous cases. The rest of the patients are quiet and amenable but require to be in confinement because, in consequence of their mental condition, they unsettle their families and neighbors by strange or obstreperous propensities or endanger their own lives or neglect themselves and their bodily wants, etc., and need the special medical attention and supervision that an insane hospital affords. Most patients of this class are quiet and well-behaved; many show average intelligence on ordinary subjects and are often good company, and a few have more than ordinary mental endowment apart from their morbid ideas. A certain number are to be found in every such institution who have practically recovered but who only remain well so long as they are leading the sheltered and restricted life of a hospital. The moment they are at large they relapse into their old mental condition owing to their inability to adapt themselves to the simplest conditions of outside life.

### VARIETIES OF MENTAL DISEASE.

It is surprising how many people there are who think that insanity is all one disease, when in reality it has, like bodily disease, many fairly distinct forms and varieties, each having in the

[8] *Ibid.*, p. 131.

main its own peculiar features. In the statistical tables compiled by the Massachusetts Board of Insanity, thirty-three forms are listed. By these I do not mean merely mental states or symptoms such as apathy, confusion, stupor, excitement, depression, suspicion, delusions, obsession (i. e., besetment), irresistible impulse, childishness, moral perversion, etc., but the regular varieties of mental disease, namely, idiocy, imbecility, dementia, confusional insanity, delirium, manic-depressive insanity (i. e., alternating attacks of mania and melancholia with rational intervals or a periodical manifestation of either kind alone), involutional melancholia (i. e., melancholia coming on in people who are passing or have passed middle life, a presenile state), senile dementia, alcoholic insanity, toxic or drug insanity, moral insanity, paresis, epileptic insanity, insanity associated with organic nervous disease, etc. Time will admit of but the briefest sketch of a few of the most important of these forms, and to do justice to the subject would necessitate technical descriptions which are out of place in a Popular Lecture.

The true idiot is, generally speaking, one born without a mind, one who never develops much more intelligence than a normal infant. The imbecile, however, once had the beginnings of a mind in infancy or early childhood, but its development has been arrested by a head injury, it may be, or severe fever of some sort. The weak-mindedness of the latter is of a higher grade than that of idiots, and some few are surprisingly near the normal. At the other extreme they cannot be distinguished from the higher order of idiot. But, however high in the grade of intelligence the imbecile may be, he is never able to earn his own livelihood. People in their dotage and those who have become weak-minded from mental disease are often erroneously called "imbeciles" when their real condition is one of dementia.

By far the largest number of insane persons are "dements," so-called, i. e., cases of dementia, by which is meant a *loss* of mental power of greater or less degree as distinguished from the simple *perversion* of the mind found in other forms of insanity in which there may be no loss of mental strength and activity. Dementia is the weakened, inactive and more or less helpless condition which underlies and follows acute insanity. It is the essence of dementia precox, senile dementia and the dementia which results from organic brain disease, i. e., from paresis, apoplexy, softening of the brain or tumors and other brain diseases. The latter are called "organic" because of the breaking down and disorganization which takes place in the substance of the brain itself, in distinction from "functional" insanity, such as mania, melancholia, paranoia, etc., in which no change in the tissue of the brain is discoverable after death.

The principal form of dementia is dementia precox, of which I have already spoken. This is the disease which takes the form of mental breakdown in adolesence, the period of life which, next to old age, is by far the most critical. It occurs in youths of a certain mental makeup and at any age between fifteen and twenty-five or thereabouts, only a few cases originating after thirty, and is the most common of all forms of insanity. Six hundred and thirty-two patients, or about 25% of all cases admitted to the Massachusetts insane hospitals in 1910, suffered from this kind of insanity, and the majority of the chronic cases remaining in our institutions are the mental wrecks resulting from this variety of mental disease. Its underlying condition throughout is gradual enfeeblement of the heretofore normal intellect, a slow decline of mental power and activity. This may be and usually is obscured in the early stages by periods of excitement and violence or melancholy with suicidal tendencies, hallucinations and delusions or confusion or ideas of persecution. Sometimes there exists profound stupor, in which the patient is more or less oblivious to all external impressions and frequently remains motionless in some peculiar attitude. It ends generally after a few years, with short intervals of apparent recovery, in a state of permanent degeneration of mind of greater or less degree and extent, but which in most cases involves the mind in more or less complete and permanent disorganization, making constant hospital care necessary, as a rule. A few cases, 13%, apparently recover. Another small proportion stop short of extreme loss of mind and live in considerable comfort, satisfaction and even enjoyment a life similar to that of high-grade imbeciles.

Manic-depressive insanity, otherwise known as alternating and periodical insanity, is characterized by the recurrence of mental disorder in the form of mania, or melancholia, alone or replacing each other, in distinct periods. The attacks are separated by intervals which are more or less regular during which the mind is practically as sound and clear as ever. Sometimes the mental condition is maniacal excitement or great restlessness, sometimes melancholia, or, one of these states may immediately succeed the other, an interval of rationality following which may last for years. Some cases have a regular cycle, within a year or two, of excitement or exhilaration, passing, without break, into profound depression, which in turn emerges as suddenly into rationality. This latter form is called circular insanity.

Paranoia is a chronic form of insanity based on an acquired or inherited degenerative taint and manifesting itself in false ideas of injustice, suspicion and persecution — delusions which often result from the non-recognition of the patient's supposed importance or abilities and overbearing egotism. Delusions and hallucinations of hearing — the so-called "false hearing" — usually develop sooner or later, but the patient's reasoning power outside of his delusions may be acute and logical. The delusions which are sometimes cleverly concealed become fixed and are usually of a disagreeable kind. The patient may be persecuted by "voices" conducted to his ears by electricity in some mysterious way. People "read his thoughts." Paragraphs in the news-

papers refer to him. He is haunted by detectives, Free-Masons or Roman Catholic priests. Sometimes hallucinations of smell and taste are present. In his search for the cause of his persecution he fastens upon some person or persons about him whom he is likely to assault or annoy in some way. The most dangerous insane belong chiefly to this class. Not infrequently the paranoiac in his determination to obtain justice for his supposed wrongs fastens his delusions upon some one in authority because of his power over others, himself included, and accuses and villifies him. Sometimes he goes farther and attacks him and perhaps takes his life. Any person at hand, even a stranger, may become his victim. Steele, for example, whose murderous assaults at the State House in Boston a few years ago will be recalled, was a pronounced paranoiac and committed the act in order to secure a trial, in the belief that it was the only means left by which he could bring the innumerable persecutions practiced upon him to public attention and secure redress and protection. Patients of this class are sources of constant trouble to hospital officials by their persistent and sometimes plausible but nevertheless false accusations of personal maltreatment and neglect and mismanagement of the institution in which they are confined. True paranoia is not a common disease, but comes oftener under public notice than other forms on account of the dangerous acts by which it is often manifested.

Paresis, that important and grave disease, is, in the great majority of cases, one of the late after-effects of syphilis and results in degeneration and wasting of certain portions — chiefly the gray matter — of the brain. It is most frequent between the ages of thirty-five and forty and is marked by a combination of mental and bodily symptoms. The disease tends to increase more or less steadily and is practically always fatal, hospital patients usually dying in from two to three years. There is a gradually increasing enfeebling of the mind with slow extinction of the memory and the intellect generally. Often there are periods of more or less intense excitement, delusions of great power and wealth, restlessness and propensity to hoard rubbish. Frequently there is no especial excitement, but extreme depression, and hallucinations of hearing are prominent. The accompanying bodily affection consists in a very gradual paralysis which usually affects at first the lips and speech and gradually extends over the whole body until the patient becomes utterly helpless. Convulsive seizures of the nature of epilepsy and apoplexy are common in the course of the disease. This is a form of mental disease which is steadily increasing with the advance of civilization and is comparatively rare in primitive and barbarous races.

Uncomplicated melancholia, occurring as a rule after the changes of senility have set in, is known as the "anxiety psychosis." It is characterized by deep despondency, often extreme agitation and anguish due to strong delusions, usually of wrong-doing or of extreme destitution, and forebodings of suffering and torture. No more intense pain can be suffered than the prolonged and sometimes uninterrupted day and night agony of some of these patients in the early months of the disease. A certain portion recover after a year or two, but are rarely able to completely resume their former activities. Their after-life is apt to run on a lower plane of energy and is considerably restricted.

### CHANCES OF RECOVERY.

The prospect of recovery from insanity is a subject about which there is much misinformation. In fact, a surprisingly large number of people still think that the insane never get well! Thurnam's statistical researches of many years ago on this subject never have been equalled for thoroughness and reliability. He followed up the histories *until death* of the patients treated at the Friend's Retreat near York, England, during a period of forty-four years, and his estimate of the prognosis of insanity from these data still holds good in the main. He wrote, "In round numbers, of ten persons attacked by insanity, five recover and five die sooner or later during the attack. Of the five who recover, not more than two remain well the rest of their lives; the other three sustain subsequent attacks during which at least two of them die." That is, there are under the best conditions about 20% of permanent recoveries.

Although this picture is an unfavorable one, it is very far from justifying the popular prejudice that insanity is virtually an incurable disease, and the view which it presents is much modified by the long intervals which often occur between the attacks, during which intervals of mental health — in many cases of from ten to twenty years' duration — the individual has lived in all the enjoyments of social life.[9] Moreover, such statistics are open to the great objection that they represent only hospital cases which are most likely to be of the severe, difficult and incurable variety. They cover, therefore, but part of the ground, and a much different idea of the prospect of cure would prevail if the undoubtedly large number of cases, chiefly of melancholia, which recover without going to a hospital or even to a doctor, could be included. In reply to an inquiry instituted by the Massachusetts State Board of Insanity,[10] 685 physicians of that commonwealth stated that of the 2,428 cases of mental disease treated by them during the year 1904, but 55% had been committed to an insane hospital, while 38% had been treated at home and the rest elsewhere outside of institutions for the insane. This tends to show that there is a large contingent of cases, a fair proportion of which are presumably of the milder and curable forms of insanity, which is not sent to hospitals.

It is a common belief among non-medical people, and to some extent among physicians, that mental disease when plainly inherited involves impossibility of recovery in any degree

[9] Earle: The Curability of Insanity, p. 60.
[10] Sixth annual report of the State Board of Insanity (Mass.), 1904.

from an attack of insanity. On the contrary, so far as the attack goes, certain strongly hereditary cases make good recoveries, although they are more liable to relapse than those in which the hereditary taint is absent or slight.

DURATION OF INSANITY.

"How long does an attack of mental disease last before recovery?" we are frequently asked. Its duration may be approximately stated as within three months for 25% of all recovered cases; less than six months for 50%; less than a year for 75%. About 20% of all recoveries are from insanity of over a year's duration.

THE EFFECT OF CARE AND TREATMENT.

The remark once made to me by a prominent surgeon, that when a person recovers from insanity "he gets well of himself," well represents a much mistaken but not uncommon sentiment regarding the care and treatment of the insane — that in this, unlike other diseases, medical interference has little effect in curing the patient. Now, as a matter of fact, this is not a whit more true of mental than it is of most physical disease in which recovery has taken place. In bodily maladies, however, there is abundant opportunity to follow the symptoms, course and treatment of the case — to observe the patient close at hand. The family of the patient, the friends and the neighbors perhaps, if the patient be at home, and many others if he be treated in a hospital, know in detail just what has been done for him and how his case has progressed. His recovery, therefore, is naturally recognized as the direct result of appropriate medical treatment. In mental disease, on the contrary, only the result and very rarely the steps taken to reach it are known, for most insane patients, from the nature of their disorder, must be treated away from home or in the utmost seclusion, even the bare fact of their illness being concealed so far as possible. If bodily disease were treated under these conditions, how long would people hold their faith in the physician as a healer?

Let me give you some idea of the work of the modern hospital alienist. He first satisfies himself as to the true nature of the patient's trouble by inquiry of his relatives into his natural mental make-up, his history, mode of life and the intimate causes of his disease, and by a careful analysis of his condition by personal examination. Then, as a part of his daily routine, come the protection of the patient from disturbing influences and from tendencies harmful to himself and others; the support of his strength against exhaustion by proper food — sometimes artificially administered; the production of quiet of mind and sleep by baths and other sedative measures; the upbuilding of his nutrition and strength by tonic treatment and systematic exercise; the arousing of the sluggish and the diversion of the depressed mind by occupation, amusement and, if need be, by change of surroundings; repeated explanations and encouragement given the patient with delusions, etc. All this requires constant and untiring trial of various expedients and unceasing and often anxious vigilance. This is purely medical treatment conducted on the same general lines that are followed by the physician in treating physical disease and is plainly quite as likely to influence the recovery of the patient. It often requires, moreover, a degree of special training, insight and knowledge of the individual and of human nature which is seldom called for in the conduct of a case of bodily illness. Nevertheless the alienist's work is practically hidden behind hospital walls so far as the public is concerned, and people in general know little of the care and treatment of the patient except when a suicide, an escape or other accident, or a reported abuse directs hostile attention to the institution in which it occurs.

Another lecture in this course will be devoted to descriptions of institutions for the insane and the various methods employed for their care, treatment, occupation and diversion. You will also be told of the training-schools for nurses and the pathological laboratories to be found in most hospitals of the kind, as well as the colony, the family or boarding-out systems and the after-care associations that are in operation. It is only by disseminating such information in popular form that we can hope to overcome the lamentable ignorance regarding insanity and the prejudice against hospitals for the insane that are still so general, in spite of the great progress that has been made toward ameliorating the lot of those unfortunates.

It is surprising to find how many people there are whose ideas of the care of the insane in hospitals are formed or largely influenced by exaggerated, if not fictitious, newspaper reports of the abusive treatment of this or that patient, occurrences which cannot always be avoided where large numbers of the insane must be treated together. Such accounts of very exceptional happenings not only subject the medical and nursing staffs of the many well-conducted hospitals to unwarranted misrepresentation and reproach, but, what is worse, cause the relatives and friends of the inmates untold uneasiness and often great anxiety.

There remains, of course, much to be learned and to be done toward advancing the knowledge of the disease, safeguarding the welfare of the patients and improving and extending the various provisions for their diversified needs, and it should be borne in mind that, although these problems do not meet the notice or create the interest that is attracted by other medical questions, they are none the less important and their solution requires and receives the same degree of scientific thought and effort.

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THE Texas State Department of Health has been advised that yellow fever has made its appearance in Mexico. An effective quarantine against the infected places is urged. — *Med. Rec.*

## Address.

### ADDRESS OF THE PRESIDENT BEFORE THE NEW ENGLAND PEDIATRIC SOCIETY.*

BY JOHN LOVETT MORSE, A.M., M.D.

IT seemed to me that it would be of interest at the beginning of this, the fourth year of the New England Pediatric Society, to review rapidly the past history of the society and to plan a little as to the immediate future. The society was founded Jan. 4, 1908. The original members numbered between forty and fifty. The membership at the end of the first year was 93, at the end of the second year 109, and at the end of the third year 122. This number is large enough to make a flourishing society. It would be better, however, if we had twice this number. We can easily have it if the individual members will aid the officers in getting new members. In the past this matter has been left almost entirely to the officers, who have done yeoman service. If every member would get to work and bring in at least one new member, the size of the society would quickly be doubled. Personal solicitation is very important in this connection, as nobody ever pays any attention to a general invitation. It would seem as if there was a large field for this society in New England, because the subject of pediatrics is one which should appeal to every general practitioner. It is a subject which should interest him almost as much as it does the specialist, since a large part of every general practitioner's work is among children.

The average attendance in 1909 was 36, or 33% of the membership, while in 1910 it was 36, or 29.2% of the membership. The smallest number at a meeting last year was 23, the largest 50. This is not a bad average. It ought to be better, however, when the standard of the meetings is taken into consideration. This standard is very high, fully up to that of the meetings of the national societies. There has been no meeting since the foundation of the society which it would not have been profitable for every one, whether a specialist or not, to attend.

The standard of the meetings is, as I have already said, very high. It is not so high, however, but that it can be improved. It would be hard, nevertheless, to raise the standard of the papers, as they are already so good. There are certain suggestions, however, regarding the papers, which I think would improve them. One of these is that a short paper is always more interesting and more instructive than a long one. There are often many details which should be published, but which are tiresome and are better omitted when a paper is presented to the society. Another suggestion is that papers are always more impressive and more interesting when they are spoken than when they are read. This method of presentation is, of course, harder than the reading of a paper, but the gain in interest is well worth the additional trouble. It is always well to remember that the details of cases, and especially pathological details, are always tiresome and usually unnecessary, and that they can be printed and read later at leisure. It is impossible, also, for a listener to grasp long series of figures or statistics. They should be presented in the form of tables, or only the main points given.

The discussions have not been free enough in the past. The members have apparently been afraid to talk freely for fear that they would hurt somebody's feelings if they disagreed with them. This seems to me to be entirely wrong. As competition is the life of trade, so free discussion is the life of a medical meeting. Every one ought to be man enough not to be offended when some one disagrees with him in a medical meeting, and not to carry away any ill feeling from the meeting.

It has seemed to me that rather too much time has been given in the past to the reading of papers and too little to the presentation of patients, pathological specimens and short case reports. I feel sure that all of these matters would be of interest and add variety to the meetings.

It would be a great help to the officers if the members would volunteer to present papers, patients or specimens, and not leave it entirely to the officers to drum them up.

The constitution says that three or more meetings shall be held annually. Four meetings have been held in each of the last two years. I hope that it will be possible to hold more than this during the coming year. Whether it will be possible or not depends, of course, on you; that is, on whether you are willing to provide the material for the meetings. With your assistance we can have more meetings and better meetings. Without it we cannot.

## Original Articles.

### WHEN SHALL WE REMOVE TONSILS AND WHAT TYPE OF OPERATION SHALL WE DO?*

BY EUGENE A. CROCKETT, M.D., BOSTON.

THE question of when to operate on tonsils, and what class of cases on whom to advise operation, is a very vital one in modern practice. Judging from cases that I frequently see in consultation, it may be said that many times the removal of children's and adults' tonsils is advised for very insufficient reasons and without apparently regarding it as a critical operation. One has only to look over an instrument catalogue for the past year and see the rapid increase of new instruments designed to check tonsil hemorrhage to realize that the removal of tonsils is often an operation of considerable severity and very considerable risk. In fact, as far as the occurrence of serious accidents and fatal results go in its performance in and around this city, it must be acknowledged that in unskilled hands it will show a higher mortality than an abdominal operation for interval appendix in the hands of a good surgeon.

* Read at the thirteenth meeting of the New England Pediatric Society, Jan. 28, 1911.

The occurrence of twelve deaths in this city and its suburbs in the last year and a half or two years following upon the removal of tonsils, as well as the occurrence of a large number of very considerable hemorrhages also fatal unless checked by experienced hands, would prove to my mind that it is not wise to advise such removal except on sufficient symptoms.

On looking over the literature, a wide difference of opinion is seen to exist among the physicians of this country, many of whom seem to regard the tonsil as the root of all medical evil to a degree unjustified by the facts. Take, for instance, in the question of rheumatism. While it is beyond question that a patient with a large tonsil full of cheesy concretion and subject to repeated attacks of acute tonsillitis is liable to an acute nephritis and also to acute articular rheumatism by reason of the existence of such throat condition, yet it does not follow that the tonsil is the whole cause of acute articular rheumatism, neither does it follow that the patient on whom a complete enucleation has been performed may not still have an acute infection of the throat with follicles on the pillars and lateral pharyngeal wall, which is certainly clinically tonsillitis if not actually so. On the other hand, I fail to see why a person possessing an approximately normal tonsil, I mean one that does not project far beyond the pillars of the pharynx, who presents no history of throat infection other than perhaps a single attack of tonsillitis or an occasional pharyngitis, would be much less liable to acute articular rheumatism from removal of these normal tonsils. As far as my own experience goes, acute rheumatic infections are certainly just as commonly associated with acute and chronic infections of the maxillary sinus or the sphenoidal sinus as they are with acute infection of the tonsil, yet it is certain that no one would advise the radical opening of the normal frontal sinus for relief of rheumatic infections which might possibly occur in the future.

Why, then, should we advise the removal of a normal tonsil for the same reason?

Then as to the question of glands in the neck, tubercular glands. We know from a large series of statistics that somewhere between eight and ten per cent of operated tonsils show evidence of tubercular infection. Such tonsils do not differ macroscopically from the usual hypertrophied tonsil. A much smaller proportion of cases are accompanied by glands in the neck. It is proven beyond dispute that the group of glands just in front and just behind the sterno-cleido-mastoid muscle when tubercular are nearly always associated with disease of the tonsil, receiving their infection through it.

From the clinical standpoint there is ample warning of such condition occurring in the neck, and as far as my experience goes the removal of the infected tonsil within any reasonable length of time of beginning glandular infection of the throat will serve to remove the cause of trouble before the throat becomes infected to an operative extent. Here again it is impossible to make a clinical diagnosis of tubercular infection of the tonsil in a large proportion of cases, and its association with tubercular glands in the neck is a relatively rare occurrence. I contend that here also it would be absolutely unnecessary to remove a reasonably normal tonsil with no history of infection on a pretext that we should avoid a tubercular process in the glands of the neck.

However, in passing, having criticised freely the shortcomings of my own specialty, I would like to say that the general surgeon who treats glands in the neck is remiss also if he does not consider the probable origin of the infection in the tonsil and remove the tonsil at the same time as the glands, or at the first opportunity afterward.

To try and summarize and reduce to a definite statement the class of cases which one believes should be operated on, I should say that in children one should remove the tonsils in all cases where the child presents large non-adherent tonsils largely filling the cavity of the pharynx because of the obstruction in breathing that such cases present and of their possible influence upon nutrition, and to secure the proper formation of the jaw at the period of second dentition.

Second, one should enucleate the tonsil in all cases where associated with enlarged glands in the neck, and in all cases of articular rheumatism where the tonsil is probably an etiological factor. These operations should be, as a rule, performed in a quiescent period, especially in the case of rheumatism, when the nervous shock and the additional sepsis should both be avoided in the acute stage. The existence of endocarditis in a more or less chronic state need not necessarily be regarded as a contra-indication for operation.

Third, the tonsils should be thoroughly enucleated in all cases of repeated peritonsillar abscess.

Conversely, the tonsils should not be removed where they are of moderate size, I mean by that, projecting not over a quarter of an inch beyond the anterior and posterior pillars. They should also not be removed under the promise to the parents that their removal will relieve the child of cold in the head or ear trouble. This may seem a self-evident proposition, but my experience is that the parent is frequently assured that the operation will relieve both of these troubles, which is a result not to be expected.

In adults we occasionally see one or both tonsils very large, almost filling the pharyngeal cavity, with a history of repeated throat trouble in childhood, but with no throat infection for many years. I saw such a case about two weeks ago in a girl of twenty-two with a beautiful mezzo-soprano voice of grand opera caliber. She had had no symptoms referable to her voice for twelve years and had no voice fatigue on sustained effort. Such a case, and it is a fairly common one, would be anything but benefited by an operation. I think it should be remembered that the operative shock to the adult is very considerable. There is also the danger of hemorrhage, which is certainly a more considerable one in adults than in children. There is also the possibility in cases of persons with a well-developed musical voice that the

voice may be permanently injured or they may have to change the whole musical method to obtain the same good results, so that even although some tonsils are distinctly pathological, I do not advise their removal. With this exception my position would be the same, as far as indications go, both for children and adults.

I am quite sure that in doing an adenoid operation a great majority of operators remove all the tonsil tissue in the throat regardless whether it is normal or abnormal in amount at the time the adenoid is removed. This is a particular point which I wish to bring out, which is contrary to good surgical procedure. It adds a great deal to the amount of shock which the patient receives and does not add anything to the success of the operation, although materially increasing the danger. The mere fact that the child is under ether for an adenoid operation should not be considered justification for the removal of tonsils if they are of normal size and the case has no history of their infection.

If we have decided to remove the tonsil, what type of operation should we perform?

If the case presents a clear history of infectious process such as peritonsillar abscess, acute articular rheumatism or tubercular infection of the neck, beyond question the whole tonsil should be enucleated and removed as completely as possible. This should be done by blunt dissection rather than sharp dissection. The particular method which I follow is to incise the tissue between the tonsil and anterior pillar with a right-angle blunt-pointed Leland tonsil knife; a blunt dissector is then passed in this incision and swept up and down, thus separating the tonsil from the anterior pillar. The dissector is then passed over the top of the tonsil, at which point the operator should be careful to remember that the upper level of the tonsil is considerably above that of the velum palati. The dissector is then carried down between the tonsil and posterior pillar, but no traction is made upon the tonsil during this dissection. The Farlow tonsil snare is then threaded with a No. 5 steel wire and passed over the tonsil, the tonsil is seized with a lock vulsellum forceps and drawn well forward free of the pillars and the snare drawn home either gradually or rapidly.

Of course this is not the only method of removal of tonsils, but I think it is safer in the hands of the average operator than dissection with the sharp scalpel or sharp scissors, and it removes the tonsil as thoroughly as any method I have ever seen. From the use of this form of operation I have only had three post-operative hemorrhages in the last five years, of which only one was serious and none were fatal. This operation of complete enucleation is, however, only necessary for cases which show definite indications for its use. In an ordinary case of simple hypertrophy devoid of symptoms, the most common type in children, it is not necessary to remove the base of the tonsil, but a perfect result may be obtained by removing enough of the tonsil to bring it down to a normal size so as not to project beyond the pillars. This may be done with a snare or punch or with the tonsillotome, if the operator is more skillful in the use of that instrument than I am; personally I am always afraid of it.

We should, however, guard ourselves against future trouble by warning the parents that it is possible for the child to have an acute infection of the nasopharynx without the existence of any demonstrable amount of tonsil tissue, although the child is very much less liable to such infections than before the tonsils were removed. We should also after this type of tonsil operation keep the child quite quiet for several days, and particularly in cases of adults warn the family that there is going to be a very sore throat. In cases of adults, put it still stronger; always tell them they are going to have the worst sore throat they ever had in their life for a period of from four days to ten days after the operation. In children this period is usually from three to four days; in adults, more often eight to ten. By treating the case during this period as one who has been subject to a moderately severe operation, many of the after complications can be avoided. If this precaution is not observed, an occasional mild septicemia will follow the operation.

I now come to the portion of my paper which is the most difficult of all to handle with a due regard to the medical proprieties, namely, what class of operators is justified in attempting this class of operation. Perhaps before I go any farther I had best enumerate the particular accidents which have come to my attention in the last three or four years and which will perhaps serve to emphasize the point which I earnestly desire to make, — that the enucleation of the tonsils is a decidedly serious operation and not one to be undertaken lightly by everybody and anybody.

The particular accidents of which I have been personally aware have happened in the hands of men not used to general surgery, to say nothing of special surgery, but a few have occurred in the hands of experienced operators. They are as follows:

Two cases of immediate fatal hemorrhage of the throat with death in about two minutes following sharp dissection of the tonsil with a knife.

One case of severe hemorrhage in the throat following sharp dissection with scissors relieved by ligation of common carotid artery.

One case of death from strangulation from inhaled vomited material, the operating physician being unprepared for such an accident and, therefore, unable to do a tracheotomy.

One case of death apparently from anesthesia, possibly a case of enlarged thymus.

One case of slow hemorrhage from both tonsils following a sharp dissection partially checked by the use of the Mikulicz tonsil clamp, but then followed two days later by hemorrhages in the skin and pneumonia with death. This case I personally saw in consultation, although I did not operate on it. It was apparently hopeless from the start.

We have had at the Massachusetts Charitable Eye and Ear Infirmary within the past year one death from hemorrhage and three cases where it was necessary to ligate the tonsil pillars for the relief of severe hemorrhage, and two cases where a secondary hemorrhage was checked by the use of the tonsil clamp. I do not know how many accidents there were in other services, but these cases of hemorrhage would have died had they not received proper and prompt surgical attention.

There have also been two cases of ether pneumonia, one of which unfortunately was one of my own private cases, and it was followed by empyema, acute mastoiditis, acute meningitis and death.

This list of accidents comprises only the cases that have come to my own personal knowledge in consultation and otherwise. They bring me to a conclusion, which, while it may be misunderstood, I think should be said by some one, namely, that any operation in the throat requiring the use of general anesthesia is too dangerous a procedure for any one to perform who is not thoroughly competent to meet the surgical emergencies which may present themselves. These, as shown by the above list, comprise the ability of the operator to ligate the common carotid, to ligate the tonsil pillars, to do an emergency tracheotomy, also to perform artificial respiration. Unless the attending physician is able to do these things he is taking a great moral responsibility upon himself when he undertakes to perform any throat operation under anesthesia.

I am happy to say that in the deaths that have occurred in and around the city in the last one or two years, nearly all have occurred in the hands of men unaccustomed to surgery and its complications. Only one out of twelve occurred in the hands of an experienced operator, or in the hands of one whom I would consider an experienced operator.

This makes the moral of this paper still more marked, — not to operate without due deliberation and on definite indications, and during the operation remember the surgical landmarks of the throat. Remove the tonsil by careful blunt dissection, and having operated, treat the patient as a serious case for the next three or four days. Do not operate unless you are able to meet the necessary emergencies which every surgeon must expect to have occasionally. If these rules are observed, the operation will be undertaken with a minimum of bad results and a maximum of success from the standpoint of the patient and his family and will not be so generally performed as at present.

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It is stated that the British South Africa Company has decided to appoint a special commission to investigate the sleeping sickness in Rhodesia. The commission will consist of Dr. Aylmer May, of Northern Rhodesia; Dr. A. Kinghorn, of Liverpool; Mr. H. Leach, of Northern Rhodesia; Mr. O. Silverlock, entomologist, and Mr. Jollyman, bacteriologist.—*N. Y. Med. Jour.*

## SECONDARY EFFORTS TO HASTEN HEALING AFTER MASTOIDECTOMY.*

BY E. O. REIK, M.D., BALTIMORE, MD.,

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In a recent number of the *Annals of Otology, Rhinology and Laryngology* (September, 1910, p. 539) Professor Mygind, of Copenhagen, discussing the post-operative care of simple mastoid wounds, makes the following statement: "As regeneration is very slow, even in cases of simple resection, I have several times, about ten to fourteen days after the operation, when the swelling of the soft parts had entirely subsided, curetted the whole cavity slightly and allowed it to fill up with a clot of blood and then made secondary suture. These experiments have given most encouraging results, the after-treatment in the majority of cases being considerably curtailed. If secondary suture is not performed, the after-treatment in cases of simple resection is, as a rule, of very long duration (on an average two and three-fourths months)."

During the course of Professor Mygind's visit to this country I had the privilege of spending several days with him, and the very great pleasure and profit of intimate talks with him upon various otologic topics. Among other things we, naturally, discussed the primary healing of mastoid wounds and the after-treatment of our failures in this direction, and we were mutually surprised to find that we had been working to the same end along the same lines. So far as I know, he has published but this one brief paragraph relating to the matter, and I am not aware of any one else having written about the measure which I desire to lay before you for consideration to-day.

It would seem to be superfluous for me to say much before this audience regarding my interest in the primary healing of mastoidectomy wounds; most of you have probably heard me dilate upon that subject before. Suffice it to say that I am quite as enthusiastic as ever about my work in that direction; that in the majority of my operations for the relief of mastoiditis I endeavor to procure primary union under the blood-clot dressing; that I succeed in a large percentage of these efforts; and that I again heartily commend the method to your favorable consideration. Be it understood, then, that in making the suggestion I am about to offer for shortening the period of convalescence after mastoidectomy I am *not proposing a substitute* measure, but rather an *alternative* for those who are unwilling to adopt the first plan, and a *secondary* measure for those whose first efforts at primary union fail.

I have always recognized the fact that a certain number of surgeons honestly feared to attempt closure of the mastoid wound, and that to them all efforts to secure primary union appeared to be dangerous.

I must assume that these surgeons are quite as anxious as am I to shorten the period of conva-

* Read before the Eastern Section of the American Laryngological Rhinological and Otological Society at Boston, Feb. 4, 1911.

lescence and reduce to a minimum the post-operative treatment and, as several others have done, I have given some consideration to the question whether any modification of the advocated technic could secure at the same time a wider adoption of the method and the desired operative results. Such modifications as have been suggested have not appealed to me because they were either in no sense important modifications, or they prevented the possibility of primary union; it is a case of trying for primary union or else packing the wound for slow granulation; to my mind there is at that time, the conclusion of the mastoid operation, no middle ground unless the alternative plan which I shall describe may be so considered.

I have chosen, as a general rule, to try for primary union, and you know with what results, — approximately 75% of successes, — though I have not selected the cases to be subjected to this form of dressing and have eliminated very few as unfit or unsafe. But the fact stands out that even the most earnest advocate of the plan sometimes fails; that no matter how careful one may be, primary healing does not necessarily follow in every case; and this has led me to the second reason mentioned above for writing this paper, — a recommendation as to secondary efforts to hasten healing.

With the cordial aid of my assistants I have studied my cases in search of an explanation as to why some cases heal *per primam* and others break down. We have found some reasons that apply broadly to all cases and have discovered some special reasons applicable to individual cases. It goes without further saying that without aseptic preparation and operative technic approaching perfection success cannot be expected. Likewise, a complete operation, thorough eradication of the necrotic bone and inflammatory products is essential to a satisfactory outcome. But an apparently perfect operation may be followed by a breaking down of the clot. We have often been surprised to secure primary union in a case where it seemed folly to have expected it and, on the other hand, we have been equally surprised at the breaking down of a clot in a case where there appeared to be every reason to anticipate prompt and perfect union. There seems to be, in some cases, an element within the patient over which we have little or no control, and at present I know of no way to determine positively in advance of the operation which wounds will heal quickly and which will require more time. We do know, of course, that many of these patients are in very poor physical condition at the time of operation. They are extremely toxic, and even though they had been strong and healthy individuals prior to the local or systemic infection, they are then reduced to a point far below par; their illness shows, in itself, a lowered state of resistance and, what is of more importance in this connection, though far more difficult to recognize, they have not at the time any recuperative power, — any ability to make new tissue. I have been able to recognize a few of these cases when operating and to predict that though the operation would cure the mastoiditis and relieve the patient of discomfort and danger, the wound would not immediately heal. In such a case the patient is simply in a state of lethargy; the wound looks healthy, there is no pus, but the clotted blood melts away because the patient does not possess the tissue-building properties necessary for its organization. For a week or ten days such a patient makes but little advance and then, slowly, granulation begins. The attacking foe has been eliminated by the operation, the toxins have been thrown out of the system, and with the tonic effect of rest the patient once more commences to live actively. If, now, such a wound be properly cleansed and the margins freshened and sutured together, prompt healing will result, as described in the above quotation from Professor Mygind.

I first employed the method in this way on Feb. 5, 1906, exactly five years ago, on a patient whom we were anxious to send home from the hospital. She had been very ill at the time of the mastoid operation and the wound made but little progress towards healing. Even when she had begun to improve markedly in her general condition it was evident that a long time would be required to secure complete healing of the wound, and the impossibility of securing proper attention for her if allowed to return to her own home caused us to give serious consideration to the problem. Dr. M. B. Kelly, who was then resident physician at the Baltimore Eye, Ear and Throat Hospital, suggested that I treat the wound similarly to my method of dealing with cases of mastoid fistula, several of which had come to us from other institutions. Accepting the suggestion, the patient was anesthetized, the wound carefully cleansed, all granulation tissue curetted away until we had the bone cavity in much the same condition as it was at the close of the original mastoidectomy, the skin margins were freshened and sutured together, while the cavity filled with blood from the subcutaneous tissues. Nine days later the patient left the hospital with the wound completely healed; the temperature had never risen above normal, and there was practically no scar.

Since that time I have had a number of opportunities to repeat the experience and in only one instance (which had followed a serious case of scarlet fever) have I failed to get prompt healing. Of these operations I shall relate but one or two of the more striking examples to further illustrate the benefits and applicability of the method. In July, 1910, I was called to the Infectious Disease Hospital (Sydenham) to see one of the nurses from the Johns Hopkins Hospital who had been taken there because of scarlet fever. She developed mastoiditis and was operated upon July 2, while in the desquamative stage of the disease. The wound was closed, but primary union did not materialize. Three weeks later, when desquamation had ceased and the patient was progressing satisfactorily save for the fact that a mastoid dressing had to be submitted to every second day

and there seemed to be no means of determining how long this might have to continue, I explained to her the possibility of a speedy cure and secured permission to perform a secondary operation. The wound healed completely in five days and she was able to leave the hospital at the end of a week.

During the past year I have operated upon two patients with persistent open wounds, or fistulæ, after mastoid operations performed elsewhere. The first was operated upon twice by an able general surgeon, with whom I saw the patient in consultation and advised a third operation, suggesting that he cleanse the wound thoroughly and close the skin incision. The patient was sent to the hospital, but for some reason or other operation was postponed and about a month later the boy appeared in my clinic at another hospital. I cut out all the old scar tissue, cleaned out the mastoid cavity and closed the wound, using a deep tension suture near the center to lessen the strain upon the subcutaneous running suture, and secured prompt healing. The second case referred to had been operated upon three times in as many different cities and came to me with an unhealed mastoid wound. Removal of the scar tissue, complete exenteration of the mastoid cells and closure of the wound was followed by immediate healing with almost no visible scar.

I might describe other cases in detail, especially those in which primary union was not sought, but where the wounds were packed and a secondary closure performed after a delay of from one to three weeks had allowed the patient to recover better general health, but while possibly interesting, such details would add little to the value of this suggestion. The points I particularly wish to place before you are these:

1. Mastoid fistulæ do not ordinarily require elaborate plastic operations, with the formation and transposition of skin flaps, but may be closed by repeating what was or should have been done at the time of the original mastoid operation, and primary union will almost surely follow the closure of such wounds.

2. If you fear to attempt primary union after mastoidectomy, or if your attempts in that direction are attended by failure, this method of secondary closure offers you an *alternative* or a *corrective*. You may pack the wound at the time of operation in the ordinary way, and at some later date, when sure that the local infection has been controlled, if not eliminated, and that the patient is satisfactorily convalescing, you can recleanse and close the wound with every assurance of safety and speedy healing.

3. The advantages to be gained are: The saving of at least a month in the time required for healing; the saving of much discomfort for the patient and trouble for the surgeon; and the substitution of a small linear scar for a rather unsightly one with more or less depression.

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The *Western Medical News* appeared in January as the successor of the *Saskatchewan Medical Journal*. The new journal is announced as the official organ of the Alberta and Saskatchewan medical associations.—*Jour. Am. Med. Asso.*

## THE ALLEGED INCREASE OF NERVOUS DISEASES.*

BY PHILIP COMBS KNAPP, A.M., M.D.,

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Some years ago, in an article in one of the popular magazines, I attempted to show that the popular belief in the "extraordinary prevalence of nervous disorders on this continent," and the rapid increase in those disorders due to the "heavy task imposed upon the nervous system in adjusting itself to a new environment and in meeting new demands," — to quote certain non-medical "authorities" on nervous diseases, — was not founded upon definite knowledge. At that time I based my arguments rather upon a consideration of the causes of nervous disease. There can be no question that there has been a diminution in the amount and severity of infectious diseases, or that toxic factors are less evident to-day. There is less abuse of alcohol; there is less danger from poisons used in manufactures, — lead paralysis, for example, is comparatively rare in our hospitals as compared with its frequency thirty years ago. Not only is the average duration of life longer, but the sanitary conditions and the health of the community is better. In one respect, however, there has been an increase in the frequency of certain etiological factors, — those due to violence, — as is shown by the increasing number of deaths from that cause. The psychical factors in the causation of nervous disorders, too, are probably less intense than in former times. Not only is the duration of life prolonged, but there is greater security for life and property. War may be hell, but it is certainly less hellish, even in Port Arthur, than it was less than a century before in Badajos. Speculation is nerve destroying to-day, but so it was in the days of the South Sea Bubble, when men gambled away thousands of pounds in a night. It is even possible that the sexual trauma, so dear to Freud, may have had an influence, if not upon Joseph in the Potiphar affair, at least upon his sister Dinah in her encounter with Shechem, the son of Hamor, in the outskirts of Shalem.

It does not necessarily follow, however, that, because the causes of nervous disease are less powerful to-day than they were in the past, there is an actual diminution in the amount of such disease. There ought to be such a diminution, but *a priori* arguments are sometimes fallacious. Data upon this point are scanty, except in regard to the one group of mental diseases. I am able to present a few statistics, covering precisely a generation, which have some interest. They are derived from the clinic for nervous diseases at the Boston City Hospital between the years 1877 and 1908 inclusive.

I am perfectly well aware that such figures are unsatisfactory. A certain number of cases of nervous disease are treated in other departments

* Remarks at a discussion on the increase of nervous and mental diseases at a meeting of the Boston Society of Psychiatry and Neurology, Nov. 17, 1910.

of the hospital; a considerable number of patients come to the neurological clinic who have no nervous disease at all, but who are obscure cases sent for diagnosis or cases for whom electrical treatment seems desirable; the out-patient clinic is a fluctuating mass, influenced by convenience of transportation, hard times, bad weather and the like; yet still those factors remain fairly constant from year to year, so that it is fair to assume that, although the total number of cases that come to the neurological department are not all nervous cases, any decided increase or decrease of the total number would probably mean an increase or decrease in the number of cases of actual nervous disease treated there.

Some of the factors which would influence attendance upon the clinic have been fairly constant. There has been no new clinic for nervous diseases of any importance established in the city in the last twenty-five years to take away patients from the City Hospital. There have been few changes in the staff, mostly in the subordinate positions. There have been but six physicians, two of whom served only two or three years; two others were connected with the department for about twenty years, and the two senior physicians for over twenty-five years.

On the other hand, certain factors would naturally have a tendency to increase the attendance. There are vastly improved facilities for treating the patients. Those familiar with the hospital twenty-five or thirty years ago may remember the nervous out-patient department — a small back-entry, which was a general thoroughfare, and an examining room not much larger, containing a large table covered with the apparatus of the throat department, a small stand containing the whole armamentarium of the neurological department for diagnosis and treatment, to wit, one small faradic battery which sometimes worked, and a rickety sofa. Assistants and externes were unknown. At present the department has nine good rooms, beside a special waiting-room and a laboratory, a complete equipment for galvanism, faradism, static electricity, high-frequency and thermo-electricity, a full supply of instruments for diagnosis, a department for massage, for the Fraenkel treatment and for defects of speech, and several assistants and externes in constant attendance. The population of the city has nearly doubled. In the last twenty-five years the great influx of Russian and Polish Jews into the city has occurred, and has been very noticeable in the clinic. It is an admitted fact that these new immigrants are a peculiarly neurotic race. All these things would naturally tend to increase the attendance at the hospital apart from any special increase in the total percentage of nervous disease in the community.

An increase has been noted, as the following table will show. This table has been derived from the annual reports of the hospital, but, instead of giving the figures for each year, I have taken the averages for five-year periods, beginning with the year 1879. The out-patient department of the hospital was established in 1865, but the department for nervous diseases not until 1877. The first two years, during which the department was started, are therefore omitted.

This table shows certain interesting facts. In the first place, we may note the enormous increase in the total number of out-patients coming to the hospital in the last decade, nearly twice as many as ten years ago, — an increase not warranted by any increase in the ill-health of the community, and perhaps not by any decrease in the wealth of the community. The number of nervous out-patients has increased, too, about commensurately with the increase in the population; but, if we glance at the column showing the percentage of nervous patients to the total number, we see not an increase, but a surprising decrease. In spite of the increase of Jewish patients and of the greater facilities for treatment, there are only half as many nervous patients to-day, as compared to the total number of out-patients, as there were twenty-five years ago.

| Periods. | Average of total number of out-patients per year. | Average of nervous out-patients per year. | Percentage of nervous patients to total number. | Population of Boston. |
|---|---|---|---|---|
| | | | | 1880. |
| 1879–1883 | 11,869 | 336 | 2.8+ | 362,839 |
| 1884–1888 | 11,903 | 435 | 3.7− | |
| 1889–1893 | 14,445 | 527 | 3.7− | |
| 1894–1898 | 20,365 | 592 | 2.9+ | |
| 1899–1903 | 29,827 | 669 | 2.2+ | 1910. |
| 1904–1908 | 39,350 | 689 | 1.8− | 670,585 |

These are the records of one hospital, during only a brief period, a single generation. Statistics are deceitful. As far as these go, however, they show no indication in this community of that "terrible increase in nervous diseases" so dear to the yellow journalists and the authors of works on psychotherapeutics.

## Clinical Department.

### AN INFECTION OF THE BLADDER WITH PENICILLIUM GLAUCUM.

BY ARTHUR L. CHUTE, M.D., BOSTON.

INFECTIONS of the bladder are due in an overwhelming majority of instances to one of the relatively common organisms; rarely, however, we see bladder infections that are due to yeasts, and occasionally cases of cystitis have been found in which the infection was with one of the moulds. The case I am to report belongs to this last group

and must be considered more as a rarity than as a condition having great clinical interest.

The patient, a woman of sixty-one, the mother of three children, came under my care in June, 1910. She had had trouble with her bladder as a girl, but her present trouble began about three years before with the symptoms of an acute cystitis. Two years before, because of her bladder pain, this woman was operated upon for a cystocele, rectocele and small carunele or prolapse of the urethral membrane. As she had relatively little relief following this operation, her condition was supposed to be largely neurasthenic and she was advised to go without local treatment and, in as far as possible, to disregard her trouble. This she did for a considerable period, but a short time before I saw her she had been forced to again take up treatment. She had been etherized, her urethra dilated and her bladder touched with nitrate of silver, on three different occasions, in the preceding four months. This treatment had given her a good deal of temporary relief and on one occasion she had remained comfortable for nearly five weeks, but after a time her discomfort referred to the bladder and her frequent and painful urination had returned.

It had been noted that her urine had contained for some time little white masses that floated on the surface. Previous to the last time she was etherized she had been given a dose of castor oil, and when her physician put an endoscope into the bladder he got several drops of fluid that had much the color of castor oil and which was slippery and oily. This last circumstance, combined with a considerable bowel looseness, had raised the question as to the possibility of an entero-vesical fistula.

On examination it was found that this patient did not completely empty her bladder. Her urine showed a trace of albumin, but no sugar; it contained many little white floating masses. They were quite different from the little granular masses of pus that one occasionally sees, in that they floated on the surface. Her bladder, which would hold 4 oz. of fluid, was diffusely red and had lost its normal markings. At its vertex there were some brilliant white masses, irregular in shape, that I believed at first sight were phosphatic incrustations on a new growth; there were also a few small white patches on the lateral bladder walls.

An investigation of the white masses in the urine showed that they were greasy when rubbed between the fingers; that they could not be satisfactorily stained with ordinary aqueous stains, but that they could be stained by heating carbol-fuchsin. The masses were made up mostly of amorphous material, but contained a certain number of round tufted bodies, in some of which little dark bodies could be seen; in others there were little vacuoles or spaces as though similar bodies had occupied these. There were collections of what looked like very large cocci, but which seemed too large for any of the ordinary cocci and also to vary more in size than is usual with cocci; they were thought to be masses of spores that had come from these spore cases. There were no definite bacteria that I could recognise, and relatively few pus cells. The white greasy masses were found to be soluble in ether and to burn on a loop with a snapping similar to that often seen with fatty substances. A second cystoscopic examination showed that the brilliant white masses at the top of the bladder could be moved about freely and by suprapubic pressure could be displaced into different positions; they were evidently masses of the white material that were floating on the surface of the distending medium. There was no new growth to be seen and no sign of any communication with the intestine.

It seemed evident that her trouble was a very stubborn infection with some yeast or mould; also, in the light of her history, it seemed improbable that palliative treatment would be successful in relieving the condition. Her bladder was, therefore, opened above the pubes. A considerable amount of the white material, and also some of the oily fluid, was skimmed off the surface of the distending fluid and preserved aseptically. The bladder surface was lightly rubbed with gauze and tube drainage established above while a retention catheter was put in the urethra.

The preserved material, left at room temperature, showed, in a few days, a considerable growth of an ordinary mould. It was given to Dr. Henry Perry for study, who found in the broken-up masses a certain number of mycelia; also some of the sporangia of the penicillium glaucum or common mould. Cultures made on various media showed nothing but penicillium glaucum. It was at first thought that this mould might be an air contamination, but the fact that Dr. Perry noted that the cultures made on agar and potato produced in growing a yellowish oily fluid, such as was found in the bladder, seemed to argue against the probability of air contamination. It seemed to point to the fact that this oily fluid was a product of the growth of the mould under certain conditions and that the white masses found in the bladder were due to a solidifying of this oily material when kept in contact with water. The fact that this white substance contained spores and was very light and floated, joined with the fact that this woman did not wholly empty her bladder, seemed to account for the difficulty in ridding her of the infection.

The surgical course of this patient was uneventful; the suprapubic opening was allowed to close at the end of four weeks. At the time she left the hospital this woman emptied her bladder completely, and examination failed to show any of the oily fluid or white masses that had been found so constantly before. She was also improved so far as her subjective symptoms were concerned. Her physician has since written me that she seemed well so far as the bladder process was concerned, though she had a ventral hernia at the upper end of the incision.

The only case that I know in the literature that bears much similiarity to this is the frequently cited case reported by Von Frisch.[1] His patient was also a woman in her sixties, who complained of symptoms of acute cystitis. She had a considerable residual and a marked hematuria. Von Frisch found in this woman's urine little white masses, the size of a hemp seed, a part of which floated and a part of which sank. He found that the floating particles had minute bubbles entangled in them that buoyed them up. When allowed to stand these bubbles disappeared and all the particles sank to the bottom. The little white bodies were made up of masses of mycelium. There were also yeasts and colon bacilli present. The gas in the urine was found to be carbonic acid gas and was due to the action of the yeasts on the sugar that this woman's urine was found to contain in amounts of from 2 to 4%.

The cystoscopic examination of this woman's bladder showed the same dazzling white masses that were seen in my patient. In Von Frisch's

[1] Soor der Harnblase: Wien. Klin. Wochenschr., 1898, vol. xi, p. 875.

case the mycelia and subjective symptoms disappeared in a few days under irrigations of nitrate of silver solution. There remained, however, the bacterial infection, which persisted for the four weeks the patient was under observation.

While Von Frisch's case and the one I have reported are somewhat similar, it will be seen that they are by no means identical. They both represent a type of bladder infection of which we have as yet relatively little accurate knowledge.

## Reports of Societies.

### NEW ENGLAND PEDIATRIC SOCIETY.

THE thirteenth meeting of the New England Pediatric Society was held Jan. 28, 1911, at the Boston Medical Library.

DR. JOHN LOVETT MORSE in the chair.

The following papers were read:

(1) PRESIDENT'S ADDRESS.[1]

JOHN LOVETT MORSE, A.M., M.D., Boston.

(2) WHEN SHALL WE REMOVE TONSILS AND WHAT TYPE OF OPERATION SHALL WE DO?[2]

EUGENE A. CROCKETT, M.D., Boston.

(3) WHAT IS TO BE THE ATTITUDE OF THE PEDIATRIST AND THE ORTHOPEDIST IN THE TREATMENT OF THE CHILD WITH CONGENITAL PTOSIS OF THE ABDOMINAL VISCERA?

JOEL E. GOLDTHWAIT, M.D., Boston.

(4) SILVER NITRATE IRRIGATIONS IN THE TREATMENT OF INFECTIOUS DIARRHEA IN INFANTS.

RICHARD M. SMITH, M.D., Boston.

DR. GREENE: I think Dr. Crockett's very interesting paper is worthy of commendation in many respects. There are a few points which it seems to me should be emphasized, and the chief one of them is the consideration of the shock and liability to hemorrhage from the operation of enucleation in adults as a reason why the radical method should be undertaken, in adults especially, with due deliberation and care. I feel perhaps a little more strongly than does Dr. Crockett about the importance of complete enucleation. The reason why the radical enucleation operation has come into vogue is that the results of partial operations in the past have been unsatisfactory, leading to a recurrence of the symptoms for which operation was done, and frequently making a second operation necessary.

If one examines a large series of cases in which partial operation has been done, and compares this with a series where complete operation has been done, the end results will be found to be strikingly in favor of the latter. The last word in the matter of technic of tonsil operations has not yet been said. The ideal type of operation in my opinion would be the most complete operation with the minimum of shock and hemorrhage.

DR. ROTCH: I wish to especially draw attention to the importance of operating upon enlarged tonsils and adenoids where they are evidently a cause of delayed development, especially of the thorax, but also when affecting the general condition of the child.

DR. LANE: I remember that once when the director of hygiene in the schools of a neighboring large municipality came out to Milton to speak before a society which was interested in the welfare of the schools there, he asked me if there was anything I would like particularly to have him speak about, and I suggested adenoids and tonsils. In the society were parents who had gone to their physicians for advice regarding the removal of tonsils and presumably adenoids in their children, and I am sorry to say that the director brought up the subject only to speak of the influence which fresh air and sunlight had upon the growths and tonsils and as opposed to operation, which to my mind was distinctly detrimental to the health of the children.

The specialist has to rely somewhat for the previous history upon the general practitioner who has seen the child with repeated attacks of tonsillitis, although at the present time the tonsils may be normal and there are apparently no indications for removal.

DR. GOLDTHWAIT: It has been my good fortune to see a good many tonsils removed in cases with rheumatoid joint conditions, and one thing which has impressed me is that if the tonsils are to be removed with the idea of removing the source of infection, they should be very carefully enucleated. I have seen several cases in which the tonsils were supposed to have been removed where there was enough of the substance remaining to make subsequent operation necessary. In cases in which the patients have not had much quinsy and much local signs of inflammation, accumulations of pus have been found which have been a very striking and a very distinctive feature in the joint conditions. It seems to me, and it has come to be my advice in speaking to patients about these conditions, that if the operation is to be performed for the removal of the tonsils to eradicate a means of infection, it should be a complete enucleation.

DR. MORSE: There are just one or two words that I want to say on the subject. I do not believe that the tonsils are the root of all evil, but do think that a good many things come from the tonsil, and to those which have been mentioned I would add nephritis as a sequela of tonsillitis. In young children, enlarged tonsils often interfere so much with deglutition that they take their food very poorly and have their nutrition very much disturbed on this account. There is one question which is often asked me which I wish Dr. Crockett would answer: If a young child's tonsils are removed, will it interfere with the development of a proper singing voice in after years?

DR. EASTMAN: I have seen two cases in the past year where the tonsils were removed, in both instances the removal effected with the tonsillotome, and several months later, as a result of this method, there was an infection resulting in glands in the neck. I cannot see any objection for complete removal of the tonsils even in a child.

DR. CROCKETT: I think that in reading a short paper on a long subject one's position is likely to be misunderstood. There are many cases which present no history pointing to the tonsils. The class of cases which present a rheumatic history, a history of tubercular glands, history of repeated obstruction, diseases of malnutrition caused by insufficient breathing space, — those are indications for removal, — those cases all need enucleation. In very many cases removal of the adenoids is sufficient. If I saw a case with large adenoids and small tonsils I would prefer to remove the adenoids and do my enucleation at a second operation if necessary, but in cases which present a clear history of infection from the tonsils, remove all that there is and do not leave any at all. Enucleation is a big operation and should not be attempted in a suburban town away from one who is competent to do it.

[1] See JOURNAL, p. 414.
[2] See JOURNAL, p. 414.

If the general practitioner wishes to do an enucleation, then let him get his patient near to the specialist, make all the necessary preparations and be prepared to meet the hemorrhage if it occurs. This is what one must always be prepared for. You can see it right down at the Eye and Ear Infirmary every day. I have been connected with the Infirmary for twenty-one years, and I suppose we do 600 or 700 operations a year; up to the year 1906–1907 I do not remember a single case of hemorrhage. Now I never finish a three months' service without seven or eight hemorrhages, and they are bad hemorrhages; they are fully as bad as an obstetrical hemorrhage, and if you do not go down and do something pretty quick, you will find a funeral when you get there. Now this is the point which I particularly wish to make. It is a form of operation which should not be entered into lightly, and one which should not be done twenty-five miles out of town; it is a hospital operation, and a serious one, and if it is done with care by the proper man it is all right. I do not mean to say that the specialist is the only one who can do the operation, but I do not think that the medical man is the man fitted to do it; it is a critical operation and it is not applicable in all cases of tonsil hypertrophy.

As to the effect on defective speech after removing the tonsils, it has been my experience that in cases of stammering, the condition is a mental one. It is a habit and is better treated by the nerve department, and I should think that operation would absolutely fail to improve it. The thick speech which tonsils and adenoids produces would be helped by removing the adenoids. Dr. Jelly has brought me quite a number of children from his class of backward children in the public schools, and in all cases, almost without exception, the difficulty was a nervous or mental thing and not at all referable to the condition of their throats, and another thing to be considered is that children imitate very readily.

I think that removal of the tonsils even in the singer's voice will probably improve the voice, but it will disturb their method, which is an important matter if the voice has already got its training, but the removal of tonsils in young children will improve the conditions and not do any harm at all. In rheumatism with an endocarditis I would not hesitate at all to do an enucleation. I would not remove the tonsils in the acute attack, that is, in the height of the rheumatic process with temperature and acute infection. I have seen it done a number of times, but my own feeling is that it always increases the septic process and the child is longer sick than usual. In the same way, in a patient with glands in the neck, I would rather delay the operation until after the acute process is over.

Dr. Joel E. Goldthwait, Boston, presented the following paper:

WHAT IS TO BE THE ATTITUDE OF THE PEDIATRIST AND THE ORTHOPEDIST IN THE TREATMENT OF THE CHILD WITH CONGENITAL PTOSIS OF THE ABDOMINAL VISCERA?

He said that anatomists have shown that one out of every five persons has a long mesentery to the transverse colon which allows a congenital ptosis of the same. This caused the person to take characteristic positions and resulted in impaired nutrition. A series of Roentgen-ray plates were shown which illustrated this condition. He then told how mechanical support could overcome ptosis.

Dr. Talbot: The plates which Dr. Goldthwait has shown us are very interesting and instructive. I have seen one or two such children and I have an x-ray plate similar to the ones just shown of a boy whose only complaint has been constipation. This boy had a ptosis of the transverse colon with a kink about half way up the descending colon. The ascending colon must have had a long mesentery because it was doubled up. A series of purgatives were tried without improvement. He was then put to bed with the same result. His stools were examined for the different food components (meat, starch and fat) and it was found that his digestion was normal. He was, therefore, given his caloric needs in foods which left the smallest fecal residue, that is, meats, sugars, fats and eggs. His abdomen came down about six inches in about two weeks. The whole clinical picture was a boy who was uncomfortable when he came in, having persistent constipation, and on going out he was a comfortable youngster who did not look particularly abnormal. Unfortunately, we did not get an x-ray to see what happened after he got a smaller food residue than previously. I think that treatment from the point of view of diet is equally important as the mechanical treatment.

Dr. Craigin: The point in diet which Dr. Talbot brought out interests me. Some of the men who have been treating these cases advocate the use of bulky foods to clear out the large intestine. I recall many young children of this anatomical type who had been fed largely on crackers, bread, potato and cereals. They improved immensely on cutting down the bulky foods and giving eggs, meat, fat and sugar.

I would like the opinion of others on the use of bulky foods. Is it not liable to aggravate the faulty mechanical condition?

Dr. Greene: I would like to ask if this type of ptosis can be present without causing any symptoms in the child, or whether this form always causes symptoms; can the child be a perfectly healthy one and yet have the condition?

Dr. Richard M. Smith read a paper entitled,

SILVER NITRATE IRRIGATIONS IN THE TREATMENT OF INFECTIOUS DIARRHEA IN INFANTS.[1]

He said that a solution of 3% silver nitrate had been used at the Boston Floating Hospital last summer in treating both the acute and chronic cases of infectious diarrhea. One pint of the solution was injected after the colon had been cleansed with a sterile water irrigation. In some of the cases an early injection apparently hastens the disappearance of blood from the stools and shortens the course of the disease. In some later cases where blood and pus persist in the movements, the ulcers can be stimulated to healing by the silver nitrate injections. Since no harm has followed the use of silver nitrate injections, and benefit has been received, it would seem worth while to give this means of treatment a further trial.

Dr. Rotch: This work, which has been done at the Floating Hospital, as reported by Dr. Smith, is extremely good and should induce physicians to make trial of it during the coming summer. It will probably be especially valuable in the more chronic forms of cases where actual lesions are present. This special means of treating cases of infectious diarrhea will, I hope, prove to be a most effective part of the general specific treatment which has lately been evolved in the bacteriological study of these cases. By what is called infectious diarrhea we understand a condition which is produced by organisms which penetrate the tissues. In this class of diarrheas, therefore, we have to deal not only with disturbances which are produced

[1] See Journal, March 2, 1911, p. 298.

within the intestine, but also outside of the intestine in the tissues. We also have to deal with local irritation of the bacilli within the intestine and a production of toxins; also with the effects produced by the absorption of these toxins and the destruction of proteid material in the tissues, thus interfering with normal metabolism. It seems probable that the character of the infecting organisms in respect to their work upon the proteids in the intestine may be changed by the giving of carbohydrate food and in this way lessening the production of toxins. For this purpose lactose can be given by the mouth, following the local treatment with laxatives and irrigations. It has also been proposed to give infusions of dextrose in order to restore to the blood the sugar which has been used up by the body during the starvation treatment as the most available form of energy. Considering how meager and inadequate our treatment of these cases has been in the past, I think that it is encouraging to at least feel that we in the near future may have three forms of specific treatment — by the mouth, by the rectum, and by infusion of dextrose.

DR. BOWDITCH: I am very glad to hear what Dr. Smith has to say about this treatment and think this procedure an excellent one. There is one thing I would like to have him tell us, and that is whether any post-mortem examinations were held on these patients which allowed him to see how far the silver nitrate penetrated. Another question is, what was the amount of the irrigation that he used. My own feeling is that the chronic cases are the ones which are more greatly relieved. I have seen one or two cases in which after ten days' duration, with a certain amount of prolapse, one injection of silver nitrate of about eight ounces was sufficient to stop all subsequent mucousy, bloody movements and make them perfectly normal. If we can help a child in that way it means a good deal to the further rapid convalescence of the case.

DR. PRAINO: I would like to ask if Dr. Smith has ever used argyrol in this connection? I have tried a 5% solution in a few cases and the results obtained were almost miraculous.

DR. JORDAN: I was very glad indeed to listen to Dr. Smith's paper, as this subject is of interest to me. I have seen a good many of these diarrheas in the last two years, and the use of silver nitrate solution in the bowels is something that I would not myself have tried without first hearing the reports that I hear to-night. Dr. Bowditch just spoke of something which I wish to touch on also. We do not know just how far the silver nitrate is going to penetrate or what harm it is going to do. To illustrate this point I will cite the case of a man who was coming to my office for treatment of a finger, and as it was not healing quite fast enough I tried the 5% silver nitrate solution to stimulate fresh growth, telling him to return the next day. He did so and I was surprised to find that the previously healthy granulations had all broken down and I had a very large ulcer there, so I wonder if the nitrate of silver may not do the same thing to the colon. I have two cases in mind which came to St. Joseph's Hospital on my service there last summer, a boy and girl from the same family. The boy was *in extremis* when he came into the hospital. He was having anywhere from thirty to forty stools, all of them foul with blood, mucus and pus, and Dr. Dwinell took a smear on a sterile towel with the intention of making an autogenous vaccine, and the smear showed so many different forms of bacteria that he was the greater part of a week trying to isolate anything which we felt safe in using, and by that time the boy began to improve. The treatment in this case was colon irrigations and an ounce of castor oil every three hours, kept up for four or five days, and elimination of the food with the exception of water and buttermilk. The sister was not as badly affected and she improved much more rapidly than the boy; but what I wanted to speak about particularly was the action of the nitrate of silver on these ulcers in the colon, and where we know so little about it, these reports would give encouragement, and I am very glad to know that the results were so good.

DR. LANE: I would like to speak of the use of the silver nitrate solution in two cases of infectious diarrhea, which we formerly called "dysentery," characterized by tenesmus and mucus, pus and blood in the stools, that occurred in my practice last spring shortly after Dr. Hewes' report of his results with a 5% solution. In these two cases in which I used it early, before the fourth day of the disease, the bacteriological examination later disclosed the proteus bacillus as the infecting organism. One child, three years old, had twenty-one stools in one day, after which I tried the 5% solution of silver nitrate, 8 oz., injecting it high after cleansing with warm water. There was no evidence of pain, but she did not retain even the 8 oz., as a part, perhaps 2 oz., was immediately expelled. Afterwards the characteristic appearance of the stools was such as Dr. Smith has described, with the exception that the number was increased, there were twenty-four in the next twenty-four hours, the odor was foul and the tenesmus was more severe. As there was no improvement after forty-eight hours, and I did not feel that one application was a fair trial, I repeated the irrigation, with the same results. The other case showed a similar lack of improvement under the silver nitrate irrigations and I was satisfied that the treatment did no good. I should hesitate to use it again.

DR. MORSE: I have not used this silver nitrate irrigation in any of the acute cases of diarrhea, but have in a small number of chronic ones, and my feeling is that most of them have been helped to a greater or less extent, some of them a good deal. I certainly have been so favorably enough impressed with the results that I feel that next summer this is one of the things I shall try more regularly than in the past.

DR. SMITH, closing the discussion: As to the question of post-morten findings, in the cases to which I referred which proved fatal, we were unable to get autopsies, so I do not know how far up the colon the silver nitrate penetrated. I am sure that none of the patients on the Floating Hospital were in any way harmed by the treatment. None of them seemed to be worse after its use. The cases which Dr. Lane has referred to are of value in a discussion of this sort. It is one of the points I tried to bring out, that since no harm is done by this treatment, it is perfectly fair to try it in a greater number of cases of summer diarrhea, for we stand a reasonable chance of quickly relieving the condition. I have not tried argyrol in any of the cases. I have seen a favorable report of its use by some one else. Dr. Bowditch asked about the amount of the irrigating fluid. In all cases we used a pint of silver nitrate solution following a preliminary cleansing irrigation.

## Book Reviews.

*Refraction and Motility of the Eye. For Students and Practitioners.* By ELLICE M. ALGER, M.D., Adjunct Professor of Ophthalmology at the New York Post-Graduate Medical School. Philadelphia: F. A. Davis Company.

There seems to be no crying need for more books on testing the eyes for glasses, but if books

appeared only when there was a crying need for them, our paper mills would not be as busy as they are. This book of 380 pages is clearly written and well printed and bound. Naturally the author has little original, but the work is an efficient guide for the testing for glasses, and the second half of the book, on the motility of the eye and its anomalies, is sufficiently complete and accurate. Chapters on color blindness and the field of vision are added.

*The Principles of Hygiene. A Practical Manual for Students, Physicians and Health Officers.* By D. H. Bergey, A.M., M.D., Assistant Professor of Bacteriology, University of Pennsylvania. Third edition. Illustrated. Pp. 555. Philadelphia and London: W. B. Saunders Company. 1909.

The title is a misnomer. The volume consists too largely of detailed quotations from various sources, the author failing to make clear the principles upon which the study of hygiene is based. In a textbook where principles are essential, this is unfortunate. Moreover, the author's choice of some authorities to the exclusion of others impairs the value of the work to the student or the health officer who wants to be well informed. The medical student may not care to read fifty dairy rules prescribed by a single authority; to be told, among other things, that "cows should not be moved faster than a comfortable walk while on the way to place of milking or feeding," but he does want to know what constitutes an unobjectionable dairy, with the reasons therefor, so that he himself may be in a position to make such rules as in his judgment may be necessary.

Rules governing barbers issued by the New York City authorities, or regulations for the control and management of piggeries in the state of Pennsylvania, belong in the appendix, if in any portion of a book on principles of hygiene, and the same may be said of the forty pages devoted to the quarantine laws and regulations of the United States.

The student interested in the study of industrial hygiene will be surprised to find, in a chapter almost entirely made up of abstracts and of extracts from writers, no reference whatever to one of the most important works on the subject in the English language.

The chapter on water and water supply is rather carelessly written and appears to be the work of a person who knows little more about the subject matter than he has gained from reading books similar to his own. Many statements do not appear well considered. In a discussion of "contamination of drinking water by poisonous metals," little knowledge of the subject of lead poisoning is shown by the statement that "since the solvent action upon lead is a rather slow process, there is very little danger from the plumbing of modern dwellings, unless water is used that has been standing in the pipes for some time." On page 111 the writer quotes De Chaumont's classification of waters as regards their degree of purity, but, except for a brief statement that "it is always necessary to have some knowledge of the geologic formation of the locality," the table is very misleading. For example, any one in New England following the figures given might be led far astray. The waters of Massachusetts containing from 14 to 40 parts per million of chlorine would certainly be placed in the "suspicious" rather than in the "pure" or "usable" class; and other like criticisms of the table could be made. On page 113 is the statement that "if the population on the watershed exceeds about 100 per square kilometer the stored water is in danger of being polluted and often proves troublesome from bad taste and odor." While it is true that the stored water might be in danger of pollution from this population, troublesome conditions from bad taste and odor are seldom if ever due to the population upon a watershed so sparsely settled as to be considered a suitable gathering ground for a water supply. The division of ground water supplies into two classes, page 115, is hardly accurate. On the whole, the discussion of water purification is more satisfactory than the statements previously made in the same chapter on matters relating to water and water supply. The author, however, appears not to be sufficiently familiar with the literature on the subject to give due prominence to its important features, whereas he frequently allows minor points to occupy too large a portion of the chapter. Similar criticism might be made concerning the chapter on "Removal, Disposal and Purification of Sewage." If, for example, one were to depend alone upon this chapter for information on the subject, one would get a distinctly erroneous opinion of the relative importance or use of different methods of sewage purification.

The volume falls far short of meeting the needs of students and physicians and consequently compares unfavorably with the leading textbooks on the subject.

*A Manual of Toxicology.* By Albert H. Brundage, A.M., M.D., Pharm. D., M.S., Professor of Toxicology and Physiology in Marquette University in the Departments of Medicine, Dentistry and Pharmacy; formerly President of the Board of Pharmacy of the State of New York, etc. Seventh edition, revised and profusely illustrated. Brooklyn, N. Y.: The Henry Harrison Company. 1910.

As the name implies, this work is only a manual, giving a concise presentation of the principal facts relating to poisons. There are detailed directions for the treatment of poisoning, and a table of doses of some of the principal and many of the new remedies. The colored plates constitute a valuable part of this work. The book can be considered an excellent one for teaching purposes, but of less value to the practitioner of medicine, who usually wants all of the information available when he encounters a case

of acute poisoning. A book, however, cannot pass through six editions without having merit, and we can heartily recommend it.

*Vaginal Celiotomy.* By S. WYLLIS BANDLER, M.D., Fellow of the American Association of Obstetricians and Gynecologists; Adjunct Professor of Diseases of Women, New York Post-Graduate Medical School and Hospital; Associate Attending Gynecologist to the Beth Israel Hospital, New York City. With 148 original illustrations. Philadelphia and London: W. B. Saunders Company. 1911.

This is a handsome monograph of 450 pages with 148 full-page plates, all printed on heavy glazed paper and dedicated to A. Dührssen. The book treats of all the operations usually performed on the uterus, tubes and ovaries by way of the vagina by means of descriptive text and very good original drawings from actual operations. The topics considered are: Posterior Vaginal Celiotomy; Anterior Vaginal Celiotomy; Simple Vaginal Hysterectomy; Diseases of the Adnexa; Hysterectomy; Myomectomy; Hysteromyomectomy; Vaginal Cæsarean Section.

The illustrations are well drawn and reproduced, so that the different steps of the author's technic are made most plain, and the full legends under the figures assist the reader materially in following every successive move of the operator.

The book is to be warmly recommended to those operators who operate on the uterus and its appendages by the vaginal route.

*Andreas Vesalius, The Reformer of Anatomy.* By JAMES MOORES BALL, M.D. St. Louis: Medical Science Press. 1910.

This monograph of one hundred and forty-nine pages including a detailed index is an admirable account of the life and work of Vesalius, a man known unfortunately chiefly by name rather than by personal acquaintance with his contributions to anatomy. This is perhaps natural since his writings were in Latin and were published prior to the middle of the sixteenth century. Dr. Ball's work can, therefore, not be too highly commended since it brings before modern readers in most attractive form historical knowledge otherwise difficult of attainment. The monograph is beautifully printed and profusely illustrated from old cuts. It should find a place not only in medical libraries, but also in the private collections of individual physicians. The public spirit which prompts the preparation and publication of such books should certainly be acknowledged by their purchase.

*Golden Rules of Diagnosis and Treatment of Diseases.* By HENRY A. CABLES, B.S., M.D. St. Louis: C. V. Mosby Company. 1911.

This volume in the Medical Guide and Monograph Series bears the sub-title, "Aphorisms, Observations and Precepts on the Method of Examination and Diagnosis of Diseases, with Practical Rules for Proper Remedial Procedure." It consists of a series of Polonius-like pellets of chemical wisdom, — derived partly from the literature, partly from the author's personal experience, — combined with selected prescriptions and therapeutic measures into a sort of anthology of diagnosis and treatment. Its persistent iteration of "*Remember*," in black-faced type, seems to carry a connotation of "*Memento mori*." Doubtless it will serve as a useful *vade mecum* to the class of physicians who practice medicine by rule of thumb.

*Inebriety.* By T. D. CROTHERS, M.D. Cincinnati, Ohio: Harvey Publishing Company. 1911.

This volume, as its sub-title states, is "a clinical treatise on the etiology, symptomatology, neurosis, psychosis and treatment and the medico-legal relations" of alcoholic inebriety. It is based on the modern conception of alcoholism as a disease. From a practical point of view this is doubtless sound, though it may technically be questioned whether the condition should not rather be regarded as a symptom-complex, a manifestation of a more fundamental morbid process. In the chapter on "Peculiarities of Conduct and Thought Traceable to Inebriety," the author refers to the delusions induced by alcohol, and in so doing touches what seems the real essence of the problem. For however much good medical treatment of inebriety may do for individuals, alcoholism as a disease of the community can never be eradicated until by education the human mind is brought to recognize the use of alcohol as one of the fallacies of life, a baneful custom of society inherited as a legacy from preceding generations and accepted without criticism, as other fallacies are accepted and so persist, the incubus of the ages.

*Hints for the General Practitioner in Rhinology and Larynology.* By DR. JOHANN FEIN, Privatdocent at the University of Vienna. Translated by J. BOWRING HORGAN, M.B., B.Ch., late Surgeon at the Hospital for Diseases of the Throat, Golden Square, London, W. New York: Rebman Company. 1910.

This small book of two hundred pages is intended to give the general practitioner as much as he could reasonably be expected to know about diseases of the nose and throat. It is entirely practical, and contains several useful hints. As examples may be cited the fact that nose bleed practically always comes from the anterior part of the septum and can be easily controlled, that a unilateral purulent nasal discharge in children often means a foreign body, that throats often appear to be inflamed or swollen when there is nothing important the matter with them, that in cases of cough with expectoration the secretion always come from below the larynx. Exception might be taken to some of his statements, and he has rather a tendency to unnecessary treatment, but as a whole the book answers its purpose well.

THE BOSTON
# Medical and Surgical Journal.

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## DR. JOHNSON AND THE MEDICAL PROFESSION.

IN the March number of the *Practitioner* is an entertaining article, by Dr. Wynne, under the above title, describing some of the relations between the great lexicographer and the medical men of his time. Johnson, by reason of his physical ailments, was a man who "suffered many things of many physicians," and in his time was attended by Dr. Pott, who gave his name to spinal caries and to his own fracture; by Dr. Heberden, he of the "nodes"; by Drs. Brocklesby and Warren, and by Messrs. Cruikshank and Levet, of lesser fame. But, like all good patients, Johnson loved his doctors and seems to have been sincerely grateful for their ministrations, which in those days of blood-letting and purgation cannot always have been pleasant. He entertained evidently a high and unshaken opinion of the profession, for in his sketch of Dr. Samuel Garth, in "The Lives of the Most Eminent English Poets," he says: "Whether . . . it be true that physicians have had more learning than the other faculties, I will not stay to inquire, but I believe every man has found in physicians great liberality and dignity of sentiment, very prompt effusion of beneficence, and willingness to exert a lucrative art where there is no hope of lucre." This tribute, like many of Johnson's grandiloquent dicta, goes straight to the point with almost epigrammatic incisiveness and is the more gratifyingly complimentary that it attributes to the doctors of that age qualities which we are still proud to be thought to possess.

Dr. Johnson's associations with physicians were not solely professional. Two of them, Dr. George Fordyce and Dr. Warren, were members of his celebrated "Literary Club"; and three, Drs. Heberden, Brocklesby and Horsley, the latter perhaps a progenitor of Sir Victor, belonged to another club that Johnson later founded at the Essex Head Inn. The fact that doctors of medicine were welcomed in such social and literary organizations, as Garth had been to the Kit-Kat Club, is another compliment to the profession, which in this respect also does not seem to have changed its characteristics with time. It has recently been said by a gentleman in Boston, not a physician, that the doctors manage every club they get into, and do it better than any one else, a statement that contains an acknowledgment of efficiency even though originally spoken with a suggestion of criticism. The doctors of Johnson's time probably did not manage clubs as they are now accused of doing, but doubtless their sociable temperaments were much the same then as now. Johnson apparently enjoyed their society, for Boswell says of him that he "had in general a peculiar pleasure in the company of physicians."

Dr. Johnson, though a radical thinker, was commendably orthodox in his medical opinions. He hated quacks as he hated all shams, and his denunciations of several charlatans of the time were merciless. One could wish that he might have written on some of the popular delusions of our own day. He was not an inveterate conservative either, but liberally alive to rational progress. "Inoculation" [against smallpox], he said, "has saved more lives than war destroys. And the cures performed by the Peruvian bark are innumerable." He would have been a good champion to oppose the anti-vaccinationists. Though doubtless often indiscreet in his diet, and neglectful of bodily exercise, for which he suffered, he seems to have entertained sound ideas on many hygienic matters. Like Benjamin Franklin, he believed in the benefits of fresh air, for, says Boswell, "he sets open a window in the coldest day or night."

These and many other points of interest, which are noted in Dr. Wynne's article, are pleasant reminders of the cordial relations between Dr. Johnson and our profession, which in many instances has enjoyed such agreeable association with that of literature.

## RECOMMENDATIONS FOR THE PREVENTION OF DEGENERACY.

LAST spring the Massachusetts State Legislature passed a resolve providing for the appointment, by the Governor, of a commission of five

to "investigate the question of the increase of criminals, mental defectives, epileptics, degenerates and allied classes." This commission, of which Dr. Walter E. Fernald was chairman, pursued its investigations during the summer and autumn, and under date of Jan. 14 rendered a report which has recently been made public and which contains some interesting statistics, conclusions and recommendations.

The commission divided the subject material of its study of degeneracy and disease into four groups, — crime and criminals; the insane; the feeble-minded and epileptic; and paupers, — and collected data of increase or decrease in each of these groups during the past twenty years by five-year periods. These statistics are carefully tabulated and compared, and from them the following conclusions seem to the commission justifiable: First, that although there has been a decrease in the ratio of the total number of crimes to the population, there has been an increase in the group of crimes against public order and in the more serious crimes, such as assault, robbery, manslaughter and murder, the latter chiefly among recently admitted alien immigrants; second, that although there has been a large increase in the ratio of insane patients in hospitals to the population, only one fifth of this is due to increase in the ratio of admission of new cases of insanity, and there is no evidence of a marked increase in the number of new cases in the community; third, that there has been a large increase in the number and ratio of feeble-minded and epileptic persons under treatment in institutions, but that the facts obtainable do not prove that there has been an actual increase in the ratio of such persons to the population; fourth, that from all the information obtainable there is evidence that there has been a decrease rather than an increase in pauperism.

These conclusions, as drawn by men of reliable judgment, certainly seem encouraging, but they should encourage the community to adopt measures towards further improvement rather than to rest satisfied with the present status. The criminals, insane, feeble-minded and epileptics may fairly be taken as representing the class of unfit whose increase in the community is undesirable. The commission was impressed with the fact that these types of degeneracy are often strikingly grouped in families and seem to represent "different phases or expressions of the same fundamental defect." To prevent the birth of such defectives and degenerates, it, therefore, recommends "extending the policy of custodial care of the feeble-minded, epileptic and insane, especially of women of the childbearing age, and prohibiting the marriage of mental defectives, confirmed drunkards and habitual criminals, as that of idiots and the insane is now forbidden." It acknowledges that such measures would not be complete, but believes they would do good and would not provoke public opposition. It does not recommend the surgical sterilization of male defectives, criminals and drunkards by vasectomy, since it believes that this procedure would tend to increase sexual vice and the spread of venereal disease and has not yet been proved an efficient substitute for permanent segregation and control. The commission regards the abuse of alcohol and the prevalence of syphilis as the two chief factors in the production and perpetuation of degeneracy. For the former evil it can offer no remedy other than the slow education of public opinion; for the latter it advocates the systematic teaching of sex hygiene to the young, and special provision for the treatment of syphilis in general hospitals. It advocates also further restriction of immigration and makes many minor recommendations.

Altogether, the report of this commission is an exceedingly instructive document and affords much valuable suggestion for thought and for action. Its most encouraging aspect is as an evidence of a disposition on the part of the community to look inherent evils squarely in the face and to endeavor to remove them by the gradual adoption of rational preventive measures.

## SMALLPOX AND VACCINATION IN THE PHILIPPINES.

AN article by Dr. Robert Olesen, in the issue of the *Medical Record* for March 4, describes the author's studies on "Smallpox and Vaccination in the Philippine Islands." Essentially the same data are presented in a paper by Dr. Victor G. Heiser and Dr. Olesen in the Public Health Report for March 10 of the United States Public Health and Marine-Hospital Service.

During the Spanish hegemony in the Philippines smallpox was extensively prevalent because no particular effort was made to control it except by segregation of actual cases, and there was no attempt at protection of the natives by vaccination. In the six provinces near Manila, with an approximate population of 1,000,000, there had been under Spanish rule an average annual mortality from smallpox of at least 6,000. Following the American occupation of the islands

in 1898, systematic universal vaccination of the inhabitants was begun, and since that time there have been performed there approximately 9,000,000 vaccinations and revaccinations. The incidence and mortality of smallpox immediately and steadily declined. Since 1907 there have been but a few scattering cases in the six provinces near Manila noted above, and not a single person who had been successfully vaccinated has died of smallpox. Similar gratifying results have been obtained on other islands in the archipelago.

Naturally the greatest resistance to this prophylactic compaign had been experienced from the ignorant aborigines, and the credit of its brilliant achievement in the face of discouragement and almost insuperable obstacles belongs to the personnel of the Public Health and Marine-Hospital Service. The problem of the complete eradication of the disease from the islands is that of continuing the present policy. The birth-rate among the natives is high, and each year there are many new persons to be vaccinated and revaccinated. The labor and expense are great, but they are justified by the results.

The papers by Dr. Heiser and Dr. Olesen deserve reading in full. They constitute a cogent argument against anti-vaccinationists, by demonstrating a most impressive modern instance of the benefits of prophylactic inoculation against smallpox, the record of which establishes one of the great services to mankind by the medical profession.

## DOCTORS AND BARBERS.

A DOCTOR can hardly pay his periodic visit to the barber, as in company with the rest of mankind he is bound to do, without being stimulated to reflection on the origin of his own profession. The barber is the prototype of the surgeon. It was he who, in the courts of kings and emperors, first began that mechanical ministry to the personal physical well-being of man which constitutes the business of the profession. Doubtless at first he learned by dressing the accidental wounds which he himself produced, and later his growing proficiency with razor and shears gave the suggestion to other surgical procedures. Of all handicraftsmen he was most delicate and adept and most accustomed to gentle contact with the person; hence it was naturally he who was called on to set the broken bone and stanch the flow of blood from a wound. The oils and spices which he used were tentatively applied to sores and septic sinuses, and, being generally bland and sterile, acquired a reputation for curative virtue.

Probably few professions have so gained in distinction as that of surgery. Its progress in this respect is something like that of the dog, always an object of the basest contumely in Homer, but now risen in caste until recognized as one of the noblest friends of man. The barber-surgeon in early days was unceremoniously booted about camp or court, and admitted to the company of his betters only when he was desired to discharge his mystery. Gradually his growing knowledge enabled him to command more respect, but even in the Middle Ages he was only an upper servant. By this time, however, the surgeon divorced himself from the barber and evolved into a separate entity, much as man and the apes may be conceived to have diverged from a common simian ancestor combining the potential characteristics of each.

Anesthesia and bacteriology in our own time have completed the emancipation of the surgeon and placed him on a pedestal of eminence at least equal to that of his medical brother of more distinguished but no less honorable lineage. Medicine may have descended from heaven as a gift of the gods, but surgery has arisen on earth out of the necessity of man and through the humble hands of the barber, its earliest prophet.

Meanwhile to-day the barber persists in his needful office and ministers to us, his distinguished kin, with a courtesy as free from envy as if he were not our poor relation. He retains, too, a skill closely cognate with that of the surgeon. 'Tis always a pleasure to watch a dexterous barber at his work, to observe in the mirror his ingenious shingling of the hair over his comb and feel the delicacy of his critical touch. Under his soporific manipulations one is inclined to assume towards him a very benevolently patronizing attitude, very different, for instance, from that which one feels towards the dentist as he pursues those diabolical maneuvers which are really so much more essential to our health and well-being. It is a painful fact of human experience that the things which are best for us are often most disagreeable or unattractive, whereas the things we really enjoy are generally unhealthy, expensive or immoral. The barber, however, is none of these, and we may relish the somnolent content of his ministrations without compensation.

Even this latter statement, however, must be immediately modified. For though one may once have submitted to the barber in security, the progress of medical science has spoiled all that. As a disseminator of infection the barber has

opportunities equalled only by those of the waiter, the cook and the manicurist. Unfortunately the general public fears chiefly only those infections which are trivial. But though for us scabies and tinea and pediculi may have lost their terror, the *treponema pallidum* still remains an object of apprehension in spite of salvarsan. The imaginative professional eye can see spirochetes crawling on the edge of the apparently innocent razor, and the distant prospect of tabes and paralytic dementia, to say nothing of more immediate evils, makes it impossible for any cautious doctor to allow himself ever to be shaved by a barber.

Our visit to the barber, however, may be productive of much varied and pleasurable speculation. He still remains akin to us, though separated by so many centuries of evolutionary progress. And though, under certain circumstances, we may "fear his skinny hand," in general his services are harmless and so refreshing that often we are glad to add to his fee a gratuity, as largess after the fashion of the potentates who were our earliest common patrons.

## AN OBSTETRIC ANOMALY.

In the March number of the *Edinburgh Medical Journal* is an interesting abstract of the comments by Dr. F. Mirto "upon certain phenomena in the labor by which one of two pygopagous twins gave birth to a child." A pygopagus is defined as "a double monster with union at the buttocks." These twin sisters in question, Rosa and Giuseppa Blazek, were united back to back "by the sacral and iliac bones in such fashion that the two vertebral columns formed a V. The two pelves had nearly the same measurements, and the mammary glands were normally developed. The genito-urinary organs opened in a common triangular space which was separated from the single anal orifice by the perineum. The coccyx could be felt to be single. The external genital organs had a triangular shape. There was a single clitoris and a single urethral orifice in a common vestibule; but though the vulva was single, there were two separate vaginal canals. From physiologic signs it was evident that the rectum was single for a considerable distance up, and that there were two bladders." One of these sisters became pregnant. "The non-pregnant sister continued to menstruate and her general nutrition was unaffected, while the pregnant sister lost flesh." The labor at term was normal. "During the puerperium there was milk in the breasts of both sisters; in fact, the secretion was more marked in the one who had not been pregnant." The physical condition of the child is not stated. "These interesting phenomena in parabiosis," concludes the review, "throw some light on the causes of mammary activity in pregnancy and seem to show that they differ from the causes underlying the general nutrition of the body."

This case is not only a remarkable obstetric anomaly, but affords interesting suggestions as to the sexual physiology of such a monstrosity, upon which profitable observations might be made similar to those recorded of the more famous male Siamese twins.

## MEDICAL NOTES.

Proposed School of Tropical Medicine. — It is reported from New York that a graduate school of tropical medicine is soon to be established in that city in association with the New York Post-Graduate Medical School and Hospital.

Sale of Cigarettes in Utah. — It is reported from Salt Lake City that on March 18 the Utah Legislature passed a bill making it a misdemeanor to sell cigarettes or cigarette papers in that state. Apparently in that community cigarette-smoking is regarded as more of a menace to civilization than plural marriages.

Cholera at Honolulu. — During the week ending March 18, one new case of Asiatic cholera was reported at Honolulu, making a total of 27 cases since the outbreak of the epidemic there on Feb. 24. There were no deaths from the disease during that week.

Scarlet Fever at Bryn Mawr. — Report from Philadelphia states that, on March 15, three cases of scarlet fever were reported among students at Bryn Mawr College, and that in consequence two of the dormitories have been quarantined and all academic exercises suspended for ten days.

Award of Lannelogue Prize to Dr. Horsley. — A recent issue of *Nature* notes that the Lannelogue prize of a gold medal and 5,000 francs for the greatest contribution to the progress of surgery has been awarded to Sir Victor Horsley, F.R.S., of London.

Award of Fothergillian Medal to Dr. Mott. — In the issue of *Science* for March 17,

it is announced that the Fothergillian triennial gold medal of the Medical Society of London has lately been awarded to Dr. F. W. Mott, F.R.S., for his researches on the nervous system.

Address in Iowa by Dr. E. H. Smith. — At a meeting of the president, faculty and students of the State University of Iowa, in Iowa City, on March 8, Dr. Eugene H. Smith, Dean of the Harvard Dental School, made an address on "The Need of College-Trained Men in Dentistry."

An American Physician Killed in Mexico. — Report from Mexico states that on March 6, Dr. J. W. Wilson, an American physician formerly practicing in Tulsa, Okla., was killed in the assault by insurrectionists on Casos Grandes. Dr. Wilson was serving with the insurgent forces in a medical capacity.

Provisional Bequest to Massachusetts General Hospital. — The will of the late William H. Hart, of Boston, who died on March 10, was filed for probate last week. It contains a provisional reversionary legacy to the Massachusetts General Hospital, by which, upon the death of certain beneficiaries without issue, that institution may receive over $50,000.

Penalty for Disregard of Quarantine. — Report from Kingston, Jamaica, states that, on March 15, the captain of the United States auxiliary schooner *Adventuress* was fined $250 for entering that port without waiting for permission from quarantine officials. The *Adventuress*, which had been making a voyage of exploration among the West Indies and along the coast of South America, had last sailed from Cienfuegos.

Prizes for Dental Excellence. — An item in the monthly bulletin for February of the New York State Department of Health calls attention to the importance of instruction in oral hygiene in the public schools. "Recently, in an English school, prizes were offered for those children who could show at the end of three months the greatest improvement in the condition of their teeth." Perhaps such forms of physical excellence are more worthy of encouragement in this manner than proficiency in athletic sports.

Induced Cell Division and Cancer. — Messrs. R. J. Harvey Gibson (professor of botany), W. A. Herdman (professor of zoology), B. Moore (professor of biochemistry), J. Reynolds Green (lecturer on vegetable physiology), C. S. Sherrington (professor of physiology), in the University of Liverpool, desire to state that, in a volume just published by Messrs. John Murray & Sons, entitled "Induced Cell Division and Cancer," by Mr. H. C. Ross and Dr. J. W. Cropper, their names are quoted both in the preface and in the body of the work, and that, having had no opportunity of seeing the work, either in manuscript or in proof, any merits or responsibilities attaching to the statements made, or to the conclusions drawn in the book, do not belong to them.

The Seventeenth International Congress of Medicine. — The Seventeenth International Congress of Medicine will meet in London in the summer of 1913. The exact date is to be fixed by the International Permanent Committee, which will assemble for the first time in London, April 21 and 22 next, under presidentship of Dr. F. W. Pavy.

At the same meeting the list of sections of the Congress will be constituted. Any wishes or propositions concerning the arrangement of this list may be sent, up to the 1st of April, to the Honorable General Secretary of the Permanent Committee, Prof. H. Burger, Vondelstraat 1, Amsterdam, or to the Bureau of the Committee, Hugo de Grootstraat 10, The Hague.

The committee will be glad to receive, before the same date, and at the same addresses, possible suggestions and propositions concerning the organization of the Congress.

Recent Honors for Dr. Ehrlich. — Dr. Paul Ehrlich, director of the Institute for Experimental Therapeutics at Frankfort, formerly famous for his researches on the blood and on the theory of immunity, has lately been awarded numerous honors for his more generally familiar recent discovery of salvarsan in his investigations of the treatment of syphilis. A recent issue of the *British Medical Journal* states that he has received from the Emperor of Russia the Order of St. Anne, from the King of Spain the Grand Cross of the Order of Alfonso XII, from the German Emperor nomination to the Senate of the Kaiser Wilhelm Society for the advancement of science. He has also been made an honorary member of the St. Petersburg Institute of Experimental Therapeutics. These distinctions, though of course gratifying as recognitions of merit, are in themselves trivial compared with the satisfaction of service in the probable benefit of his discovery to humanity.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, March 21, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 46, scarlatina 49, typhoid fever 11, measles 151, smallpox 0, tuberculosis 74.

The death-rate of the reported deaths for the week ending March 21, 1911, was 20.97.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, March 18, 1911, was 275, against 241 the corresponding week of last year, showing an increase of 34 deaths, and making the death-rate for the week, 20.81. Of this number 139 were males and 136 were females; 263 were white and 12 colored; 179 were born in the United States, 93 in foreign countries and 3 unknown; 74 were of American parentage, 175 of foreign parentage and 26 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 42 cases and 2 deaths; scarlatina, 48 cases and 6 deaths; typhoid fever, 8 cases and 0 deaths; measles, 133 cases and 1 death; tuberculosis, 60 cases and 29 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 37, whooping cough 4, heart disease 35, bronchitis 3. There were 21 deaths from violent causes. The number of children who died under one year was 50; the number under five years, 70. The number of persons who died over sixty years of age was 70. The deaths in public institutions were 102.

DEATH OF MISS PILLSBURY. — Miss Grace G. Pillsbury, who died at Malden, Mass., on March 17, was formerly superintendent of nurses in the Addison Gilbert Hospital at Gloucester, Mass., and had also served for three years in the same capacity at the Danvers (Mass.) Insane Hospital.

A CENTENARIAN. — Mrs. Eliza Dix Upham, who died at Brookline, Mass., on March 12, is said to have been born on June 11, 1808, in Weston, Mass. Until a few months ago her health was reported to be excellent, and she was able to read without glasses. She had been twice married, and is survived by one son.

APPOINTMENT OF NEW PORT PHYSICIANS AT BOSTON. — It is announced that Dr. William H. Gay, of East Boston, who has served for the past ten years as assistant port physician of Boston, is to be promoted to the position of port physician and quarantine officer, recently made vacant by the appointment of its former incumbent, Dr. Paul Carson, to take charge of the medical inspection of public schools in this city. It is also reported that Dr. Francis X. Crawford, of Boston, is to be appointed as the new assistant port physician.

JOINT DENTAL MEETING. — A joint meeting was held in Boston last week by the Metropolitan District Dental Society of Massachusetts, the Odontological Society of Boston, the Tufts Dental Alumni Association, and the American Society of Dental Science. About 150 persons were present. The two principal addresses were made by Dr. John Winters Brannan, of New York, on "Dental Work at the Bellevue Hospital," and by Dr. Herbert L. Wheeler, of New York, on "Dental Hygiene on a Rational Basis."

SOME HEAVY MEN. — Joseph A. Dusahame, a Civil War veteran who died last week in the Soldiers' Home at Noroton, Conn., was reputed to be the heaviest man who ever served in the United States Army. At the time of his death he is said to have weighed 450 pounds.

At a recent meeting in Boston of a committee of the New England Fat Men's Club, that interesting organization which illustrates the humorous genius of the Yankee in making a club out of anything, Mr. C. H. Jackson, of Brockton, Mass., said to be the heaviest man in New England, is alleged to have demonstrated his present weight to be 535 pounds. Sir John Falstaff should be the proto-patron of this club.

NEW YORK.

REPORT OF NEW YORK STATE BOARD OF CHARITY. — The forty-fourth annual report of the State Board of Charities has just been made public. In it is urged state supervision of charitable institutions which do not receive public money. The work of private relief, the report says, is carried on mainly by corporations organized under the law to perform duties essentially public in their nature. The people of the state are entitled to know how these charitable creations of the state fulfil the functions for which they were created, and to be informed annually to what extent dependency exists within its borders and the methods of relief employed. Moreover, trust funds given for the aid of the poor should be examined from time to time by state authorities to insure the protection and proper use of such funds. The report states that an

investigation made last June showed that some of the smaller private hospitals in New York City which receive pay from the city for the care of public patients, besides other defects, were providing for the patients a much smaller cubic air space than the best authorities have considered necessary; and this resulted in the adoption by the board of more specific rules for the care of public patients by private hospital corporations generally. The Department of Public Charities in New York has, it says, two paramount needs: The extension of its facilities to relieve constant overcrowding, and the payment of better wages to hospital helpers in order to secure a higher grade of service. Mayor Gaynor is given credit for the additional appropriation in the budget of 1911, part of which is being used for increased remuneration for minor employees. The particular needs of the Bellevue and Allied Hospitals are stated to be the extension of the dispensary facilities of Gouverneur Hospital, now greatly overtaxed, and the addition of a new wing and a nurses' home to Harlem Hospital. In this connection it is pointed out that New York's present system of administering its public hospitals, through three separate departments, is archaic and illogical. The board again urges its recommendation, made to the legislature in 1910, for the establishment of a farm colony for tramps and vagrants. The statistics given in the report show that there has been an increase, since 1906, of 9,000 in the number of dependent persons of all kinds cared for by the state, the total number now being 78,384. The numbers in the various classes are specified, after which it is mentioned that during the year outdoor relief was reported to have been given to 43,324 persons in the forty-nine cities of the state, at a cost of $373,513. The per capita rate of expenditure by inhabitants of each city is given, ranging from 1 cent in Elmira to 58 cents in Middletown, where the overseer of the poor reports 19 out of every 100 of the population as receiving relief.

Memorial Gift. — Mrs. Siegmund Neustadt, widow of a New York banker, has given, as a memorial to her husband, $30,000 to the Young Men's Hebrew Association for a finely equipped building at the association's vacation camp at Cold Spring on the Hudson.

Meeting of Women's Medical Society. — The fifth annual meeting of the Women's Medical Society of the State of New York was held at the Academy of Medicine on March 9 and 10, and the sessions were closed with a dinner at the Hotel Leonori, at which no mere man was admitted.

Scarlet Fever at Little Falls, N. J. — Three of the public schools of Little Falls, Passaic County, N. J., have been closed on account of an epidemic of scarlet fever. This is the second outbreak of the disease in the village since the autumn, and more than fifty children have been attacked.

Club House for Bellevue Nurses' Alumnæ Association. — Mr. and Mrs. William Church Osborn have announced that, on May 1, they will present to the Bellevue Nurses' Alumnæ Association a commodious home and club house on 26th Street, opposite Bellevue Hospital, as a memorial to Mr. Osborn's mother, who was one of the first persons in this country to interest themselves in training schools for nurses.

Cerebrospinal Meningitis on Shipboard. — On two successive days, March 12 and 13, steamships arrived at quarantine with passengers ill with epidemic cerebrospinal meningitis on board. The first of these was the *Patris*, from Piræus, Greece, with five persons suffering from the disease. During the voyage six others had died from it, the diagnosis being confirmed by autopsy in the case of two of them, whose bodies were still on the ship. On the second steamship, the *Martha Washington*, from Trieste, there were four cases of the disease, and one had died during the voyage. All the patients were promptly taken to the Hoffman Island Hospital, where they were successfully treated by means of Flexner's serum. Health Officer Doty states that he has found that the great majority of cases of cerebrospinal meningitis coming to the port of New York in the last few years have been among Greeks.

The Relation of the State to Poliomyelitis. — The possibility of the control of epidemic anterior poliomyelitis by the state was discussed at the March meeting of the Society of Medical Jurisprudence. The principal paper of the evening was read by Dr. B. Sachs, who contended that the state authorities should consider the manner in which the epidemic spreads from town to town. Provision should be made, he said, for tapping the spinal column, and the fluid should be sent to state laboratories for diagnosis. Dr. Flexner had found that the cerebrospinal fluid from monkeys experimented on showed an opalescent

appearance before paralysis developed, but later became normal. The state should require that all cases be reported, and schools should be closed where more than one case occurred. Dr. Smith Ely Jelliffe said the infection was carried by some form of contact, either mediate or intermediate. The patient himself was not so likely to communicate the disease as the person who came in contact with him. We might have to look in another direction for the means of communication. Little progress was made in the prevention of yellow fever until transmission by the mosquito was discovered, and here also some such carrier would possibly be found. Dr. H. W. Berg was decidedly of the opinion that our knowledge of the disease had not yet reached a point where the state could well be called to take its prevention in hand. At present, he said, very little could be done in the way of prevention. The victim was often overwhelmed as by a thunderbolt. A perfectly healthy child might go to bed without a symptom of illness and in the morning be paralyzed. Dr. Flexner, by examining the fluid of his monkeys every day, was able to find the virus before paralysis took place, but he had artificially infected the monkeys and knew that the virus was there. In the human subject there was no symptom apparent before the onset of the disease, and the damage was done when the paralysis developed. We certainly had no right to enter the spinal column of a healthy child because another child on the next block had been paralyzed. As to closing the schools, it should be borne in mind that the epidemic in New York was in the summer, when the schools were not in session. There was no connection whatever between the disease and the schools. Dr. Flexner's infected monkeys were in the same cages with other monkeys, yet not one of the latter contracted the infection. In the epidemic of 1907, not a single instance came to Dr. Berg's knowledge where one member of a family gave the disease to another. The contagion was not direct; there must be a carrier for the infection. More time should, therefore, be given to the medical profession for investigation of the disease before plans were made for its prevention and supervision by the state.

## Current Literature.

MEDICAL RECORD.

MARCH 11, 1911.

1. CACCINI, A. *Pellagra as We see It in Italy; Old and New Theories; with Report of Cases Seen in New York City.*
2. GERSTER, A. G. *A New Variant for Ventral Herniaplasty.*
3. *SEIBERT, A. *Hypodermic Injections of Salicylates in Rheumatism.*
4. NOBLE, C. P. *The Treatment of Acute Mania.*
5. *PILCHER, P. M., AND PILCHER, J. T. *Unilateral Chyluria Caused by the Filaria Sanguinis Hominis Treated by "606."*
6. *MEISENBACH, R. O. *Artificial Muscles in the Early Treatment of Infantile Paralysis; A New Method.*
7. GOLDMANN. *The Climatic Indications of Egypt in Otology and Laryngology.*

3. Seibert has demonstrated clinically that a sufficiently large hypodermic injection of salicylic acid or salicylate of soda (10% salicylic acid solution in sesame oil or 20% watery solution of sodium salicylate) can inhibit the pathogenic action of rheumatic organisms in the human body in a few hours without causing toxic symptoms. By first injecting a small watery solution of cocaine, gr. ½, all discomfort to the patient can be avoided.

5. Pilcher and Pilcher report an interesting case of chyluria. Cystoscopic examination showed that the chylous urine was being secreted from the left ureter only. Filariæ sanguinis hominis were found in blood smears taken at midnight every night. Six tenths of a gram of "606" was given subcutaneously; for the first twenty-four hours after the injection, the urine remained unchanged; during the succeeding forty-eight hours, it became perfectly clear (first time in seven months); suddenly from the sixty-eighth to the seventy-second hour it became chylous again and contained large numbers of seemingly dead filariæ, embryonic and adult; after the seventy-second hour the turbidity ceased and no filariæ were demonstrable either in the urine or the blood.

6. Meisenbach has had good results with artificial rubber muscles as temporary reinforcements for muscles damaged by poliomyelitis. The method is chiefly applicable to the ankle, knee, wrist and shoulder. [L. D. C.]

NEW YORK MEDICAL JOURNAL.

MARCH 11, 1911.

1. FOX, H., AND TRIMBLE, W. B. *The Clinical Results from the Use of Salvarsan.*
2. WOLBARST, A. L. *A Simple Apparatus for the Intramuscular Administration of Salvarsan at the Bedside, with Special Reference to the Maintenance of Asepsis.*
3. BURK, J. G. *A Lanolin and Oil Emulsion of Salvarsan for Intramuscular Injection.*
4. ALEXANDER, L. D., AND GWATHMEY, J. T. *Technic in Adenoid and Tonsil Operations.*
5. *FARNELL, F. J. *An Extracerebral Tumor in the Region of the Hypophysis.*
6. PEDERSEN, J. *A Case of Colon Bacilluria in a Twelve-Year-Old Girl.*
7. BENEDICT, A. L. *The Effervescence Test for Gastric Acidity.*
8. VOGEL, C. W. *The Eradication of Plague from Large Cities.*
9. KNOTT, J. *Phrenology and Its Founder: The Claim of Franz Joseph Gall on the Homage of Scientific Posterity.*

5. Farnell reports an unusual case of intracranial tumor in a middle-aged woman. Symptoms were remittent and lasted in all eight years; the prominent ones were headache, vomiting, delirium, somnolence, progressive loss of vision, ocular palsies, staggering gait and Romberg's sign. Autopsy showed a semicystic tumor mass continuous with the pituitary body imbedded in the base of the brain just behind the optic chiasm and pressing posteriorly on the third and sixth cranial nerves. [L. D. C.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

MARCH 11, 1911.

1. MCMURTY, L. S. *Cæsarean Section, with Special Reference to Time of Operation and Its Technic.*
2. STRACHAUER, A. C. *Mobilization of Joints by Means of the Rubber Bandage.*
3. KOEHLER, G., AND TONNEY, F. O. *Control of Pasteurization.*

4. *Sherk, H. H. *Injuries of Abdominal Viscera without External Signs of Violence.*
5. Lord, J. P. *The Secret Commission Evil.*
6. Byford, H. T. *Treatment of Anteflexion of the Uterus.*
7. Chiari, H. *Importance of the Autopsy and Other Pathologic Anatomic Examinations.*
8. Geraghty, J. T. *Method of Treating the Prostatic Utricle.*
9. Boehm, J. L. *An Improved Gravity Apparatus for the Intravenous Injection of Salvarsan.*
10. Fuller, C. A. *Sanitary Inspection of Oyster Grounds in the United States.*
11. Mullowney, J. J. *The Plague in North China.*
12. Sutton, W. S. *A Handy Pocket Case for Blood Pipettes and Solutions.*
13. Aronson, E. A., and Olban, H. *Pneumococcemia; Bilateral Empyema; Recovery.*
14. Eidman, S. *Fracture of the Clavicle. Its Diagnosis by Transmission of Respiratory Sound.*
15. *Rous, P., and Murphy, J. B. *Tumor Implantations in the Developing Embryo.*
16. Torpey, J. F. *Primary Orchitis with Secondary Parotitis.*
17. Cannon, W. B., and La Paz, D. De. *The Stimulation of Adrenal Secretion by Emotional Excitement.*
18. Rilihan, H. J., and Simon, J. *Report of Case of Paralysis of the Bladder, Illustrating the Importance of Catheterization before Operation.*
19. Wade, B. N. *A Case of Enteritis from Trichocephalus Dispar.*

4. The following are important points brought out in Sherk's very thorough paper on abdominal injuries. A stomach distended with food, fluid or solid, or with gas, is more easily bruised or torn than an empty one. Therefore, the relation of the time of the last meal and stool to the time of the injury is of importance. According to most authorities, the liver is the most commonly injured of the solid viscera, except the kidneys. In the author's series, however, the spleen received the greatest number of injuries. Splenic injuries are more common in tropical countries where malaria exists, because an enlarged spleen is more liable to injury than a normal one. Most of the tears occur on the inner surface even when the injury is distinctly on the outer surface. The normal spleen is most likely to rupture at the height of its functional activity, i. e., some hours after eating. In most cases, injury to the stomach is accompanied by injury to the liver also. The upper end of the jejunum and lower ileum are affected in 75% of all intestinal injuries, the duodenum in 5%, the large intestine in a little over 3%, while 17% covers other parts of the small intestine. Rupture of the gall bladder is rare and occurs only with severe liver injuries, especially when stones are present. According to Deaver, the cystic duct is the part most commonly affected. Early vomiting is not of much importance, but persistent or late vomiting is usually indicative of serious injury. In large tears of the stomach, vomiting is likely to be absent. Distention is generally a late accompaniment of trauma of abdominal viscera. When it appears early, to any extent, it usually means gross injury, with extensive extravasation of intestinal contents, both fluid and gas. The distention that comes later and comes on gradually is the result of intestinal paralysis and is one of the most important signs in diagnosis. Auscultation to ascertain the presence or absence of peristalsis here is of vast importance. The primary symptoms of injury of the mesentery are those of hemorrhage. Hiccough often suggests injury to the diaphragm. There are no symptoms that are pathognomic, most of them being common to all injuries, but, in general, progressively increasing shock indicates trauma of the solid organs, while early symptoms of peritonitis follow tears of the intestine or stomach. Pain as an initial symptom is unimportant only in that it calls attention to the possible site of the trauma.

15. Rous and Murphy have succeeded in implanting bits of the sarcoma of the fowl into the embryonic membranes in the growing chick egg, and also, a fact which is of far vaster importance, have succeeded in getting transplants in the same kind of egg embryos by means of a cell-free filtrate of this same sarcoma. This work ought to have great weight if such transplants can be carried out in other experimental animals. [E. H. R.]

### Journal of Experimental Medicine.

### Feb. 1, 1911.

1. Stewart, H. A. *An Experimental Contribution to the Study of Cardiac Hypertrophy.*
2. Noguchi, Hideyo, and Bronfenbrenner, J. *Sublimate and the Serum Diagnosis of Syphilis.*
3. Noguchi, Hideyo, and Bronfenbrenner, J. *Barium Sulphate Absorption and the Serum Diagnosis of Syphilis.*
4. Noguchi, Hideyo, and Bronfenbrenner, J. *Effects of Mechanical Agitation and of Temperature upon Complement.*
5. Kilduffe, R., 3d. *Morphological Changes Observed in a Mouse Carcinoma in the Course of Long-Continued Transplantation, and the Influence of an Experimentally Produced Decrease in the Growth-Energy of the Tumors upon Their Morphological Character.*
6. Rous, P. *The Relations of Embryonic Tissue and Tumor in Mixed Grafts.*
7. Rous, P. *The Effect of Pregnancy on Implanted Embryonic Tissue.*
8. Lambert, R. A. *The Influence of Mouse-Rat Parabiosis on the Growth in Rats of a Transplantable Mouse Sarcoma.*
9. *Rowley-Lawson, M. *The Estivo-Autumnal Parasite; Its Sexual Cycle in the Circulating Blood of Man, with a Description of the Morphological and Biological Characteristics of the Parasite.*
10. Brown, W. H. *Malarial Pigment (So-Called Melanin); Its Nature and Mode of Production.*

9. Dr. Mary Rowley-Lawson reports the result of a very careful and exhaustive study of the estivo-autumnal parasite. Her article is accompanied by a large number of micro-photographs and some colored plates. These photographs and plates are very convincing and seem to justify the writer in concluding that the very young ring-form parasite has no capsule; the macrogamete has one during its development and sexual activity; while the microgametocyte has it only during its development. The fact that the crescent is more resistant to quinine than the other varieties of malarial parasites might be explained by the presence of a capsule which appears to protect the parasite, certainly during the sexual phase and probably during the "resting" period (when not undergoing sexual changes). The youngest form of ring parasite shows no evidence of encapsulation.

*The sexual cycle* of the crescent may occur in the circulating blood of its human host. This cycle is probably very rapid, for practically the whole cycle can be seen in a few smears taken from one puncture. The microgametocyte, or male, develops a flagellum (microgamete) which, *after the parasite has assumed the crescentic phase*, leaves the body of the parasite and enters the body of the macrogamete, or female, *during its existence as a round body*. Fertilization is then accomplished. The microgametocyte, after the escape of the flagellum, shows evidence of degeneration and is probably cadaveric.

After fertilization, the macrogamete assumes the crescentic form, reaches the reproductive phase and undergoes sporulation, the product of which appears to be the small ring-form parasite. Renewed infection of the red cells then takes place. [R. I. L.]

### Surgery, Gynecology and Obstetrics.

### February, 1911.

1. *Mayo, W. J. *Some Observations on the Operation of Abdominal Myomectomy for Myomata of the Uterus.*
2. *Bruce, H. A. *Inflammatory Tumors of the Abdomen Simulating Malignant Disease.*
3. *Pilcher, P. M. *Injuries of the Kidneys, with End Results.*
4. Davis, C. B. *Primary Multiple Malignancy; with Report of a Case.*
5. Horsley, J. S. *Large Ovarian Cysts; with Report of a Case.*

6. *RUBIN, I. C. *The Functions of the Great Omentum: A Pathological and Experimental Study.*
7. JONES, E. D. *Primary Sarcoma of the Appendix.*
8. BRYAN, R. C. *Stone in the Ureter.*

1. Mayo believes that for patients over forty years of age hysteromyomectomy is undoubtedly the operation of choice and after the age of forty-five there will be few exceptions to this choice. According to Bland-Sutton, 10% of women who require operation for myomata after they have reached fifty years of age will have associated with it malignant disease of the uterus.

2. Bruce cites a class of cases of inflammatory disease, generally a perisigmoiditis or colitis, in which many of the signs of malignancy, such as obstruction, loss of weight, tumor and pain, are present, but which show microscopically only chronic inflammation.

3. Pilcher considers that the expectant treatment is indicated in cases of slight injury to the kidney in which there is only moderate or transitory hemorrhage of short duration. Operation is contra-indicated when both kidneys are extensively injured. Operation is strongly advised when there is progressive, recurrent or persistent hemorrhage; also, when infection has taken place.

6. Rubin's very interesting and complete article on the functions of the great omentum is summarized in brief as follows: The omentum has no spontaneous motility. Its displacements are due to intestinal peristalsis, intra-abdominal tension and the static condition of the stomach, colon and small intestine. The omentum has no demonstrable chemotaxis; the amount of intraperitoneal fluid, gas in intestine and suction action of the diaphragm explain the apparent chemotaxis. The omentum has no intelligent and spontaneous protective rôle. It cannot supply vitality to necrotic organs, nor vascular supply to those deprived of their circulation. The usefulness of the omentum in inflammatory lesions of the abdomen depends upon its power to form adhesions which isolate and render innocuous toxic products, its power of absorbing and eliminating toxic products or destroying them by virtue of its phagocytic elements, but when contrasted with its sequelæ, intestinal obstruction, pain, etc., its beneficence is over-balanced. The chief functions of the omentum are those of any other mesentery, namely, the fixation of the viscera and vascular supply. When the omentum is found adherent to an intra-abdominal tumor the probabilities are that the mass is inflammatory and not neoplastic. If the tumor is neoplastic, it has probably undergone inflammatory changes. This is an important point in diagnosis. Too much should not be expected from grafts of the omentum. A detached piece rapidly becomes necrotic and is useless. Only intact portions produce serviceable adhesions. [E. H. R.]

## BRITISH MEDICAL JOURNAL.

### FEB. 18, 1911.

1. OWEN, E. *The Hunterian Oration on John Hunter and His Museum.*
2. *HASLAM, W. F. *The Lettsomian Lectures on a Review of the Operations for Stone in the Male Bladder. Lecture I.*
3. *STOCKMAN, R. *The Clinical Symptoms and Treatment of Chronic Subcutaneous Fibrosis.*
4. *ALEXANDER, D. M. *The Use of Leucocytic Extract in Infective Processes.*
5. METCALFE, J. *Electricity in Neurasthenia.*
6. EWENS, J. *Simulated Disease Occurring in Persons of Hysterical or Neurotic Temperament.*
7. FOGGIE, W. E. *Eucalyptus-Oil Poisoning.*
8. ALSTON, H. *The Curative Effect of Salvarsan ("606") in Cases of Frambesia.*
9. FFRENCH, E. G. *A Report on Three Cases Treated with Ehrlich's Specific for Syphilis.*

2. Haslam presents an interesting historical review of the growth and development of the surgery of stone in the male bladder.

3. Stockman does not believe that the condition first described by Dercum as "adiposis dolorosa" is a definite clinical entity, but that many of the symptoms described as belonging to this condition are simply due to the presence of fat alone. He goes on to describe what he terms a very common affection in which the presence or absence of fat is but an incident which consists of a chronic subcutaneous fibrosis. It is apt to be the result of acute rheumatism, influenza or general gonococcal infections. Microscopic examination shows a fibrosis of the subcutaneous tissues, regardless of the fat, with peri- and endo-arteritis of the small vessels and an interstitial inflammation of the small nerve twigs. The symptoms are aching pain, stiffness, neuralgias, numbness, fatigue, lack of vigor and energy, and others. The thickenings are readily felt and usually tender on pressure. Treatment consists of carefully regulated massage in thin people and getting rid of the fat by diet and then massage in fat people. This somewhat fantastic although ingenious statement will require further confirmation before it can be accepted.

4. Alexander discusses the work previously done on the use of leucocytic extract in various conditions, but expecially tuberculosis, and reports his own experiences with ten cases of infections due to various organisms. His results are apparently entirely negative. He found that the injections of leucocytic extract produced a great leucocytosis in the blood which is exactly the opposite of the findings of Floyd and Lucas in their work on the use of the leucocytic extract in pneumonia in children. [J. B. H.]

### FEB. 25, 1911.

1. FRENCH, H. *A Clinical Lecture on the Differential Diagnosis in Cases of Albuminuria.*
2. *WINDLE, J. D. *Clinical Observations on the Use of Digitalis in Heart Disease and Dropsy, with Fibrillation of the Auricles (Nodal Rhythm).*
3. BROWN, G. *Two Cases of Death from Post-Anesthetic Acid Intoxication.*
4. *MORTON, C. J. *Radium in Cancer.*
5. SKINNER, B., AND CARSON, H. W. *Curative Influence of Röntgen Rays in Malaria.*
6. JONES, E. H. *Thyroid Extract in Carcinoma.*
7. WEBER, F. P. *A Note on "Sensory Tetany," "Vasomotor Tetany," Acroparesthesia and Raynaud's Symptoms.*
8. *HASLAM, W. F. *The Lettsomian Lectures on a Review of the Operations for Stone in the Male Bladder.*

2. Windle presents a long and elaborate article, illustrated with many sphygmographic tracings, on the use and action of digitalis in heart disease and dropsy associated with fibrillation of the auricles. Fibrillation of the auricles is a term used to describe that condition of absolute cardiac irregularity with a ventricular venous pulse in which there is an entire absence of normal auricular contraction, but instead its musculature is in a state of unceasing tremulous movement. Such cases resulting from old rheumatic lesions respond most actively to digitalis; in other cases, apparently similar, digitalis has apparently little effect. The writer discusses the causes of this discrepancy in this article. In his opinion the difference in action of this drug depends largely on the amount of associated kidney involvement.

4. Morton, discussing the use of radium in cancer, believes that its chief value is in aiding other methods of treatment and not in excluding them. If it is going to act beneficially, it does so at once within three to four days.

8. *Cf. Lancet*, Feb. 25, 1911. [J. B. H.]

## DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 7.

### FEB. 16, 1911.

1. AHLFELD, F. *Puerperal Auto-Infection.*
2. *BITTORF, A. *Herpes Zoster and Renal Colic: A Contribution to the Knowledge of Head's Zones.*
3. *SCHERSCHMIDT. *The Treatment of Sleeping Sickness with Arsenophenylglycin.*
4. MÖLLER, S. *Cutaneous and Intracutaneous Tuberculin Inoculation with the Use of Graded Doses and Its Importance for the Diagnosis of Tuberculosis.*
5. SEELIGMANN, L. *Contributions to the Abdominal Radical Operation for Uterine Cancer. Total Extirpation of a Cancer of the Bladder, Uterus and Rectum by the Abdomino-Vaginal Route.*
6. TRAUBE, J. *The Treatment of Syphilis.*

7. Eliasberg, J. *The Lack of Free Complement in the Blood of Lepers.*
8. Biehler, R., and Eliasberg, J. *Complement Binding in Leprosy with Leprous Antigen.*
9. Löhlein, M. *A Peculiar Pigmentation of the Internal Organs of Coast Negroes of Kamerun.*
10. Berg. *Iodism and Thyroidism.*
11. Shmey, F. *A Peculiar Case of Purpura with Fatal Cerebral Hemorrhage in Childhood.*
12. Sigalin, M. *Breathing Gymnastics on a Psychic Basis.*
13. Schall, M. *Technical Novelties in the Domains of Medicine, Public Hygiene and Cure of the Sick.*

2. Bittorf reports on the occurrence of herpes zoster with painful diseases of the internal organs. This herpes appears in the spots known as Head's zones. He reports a case of hydronephrosis with a herpes zoster in the region of the eleventh dorsal segment. In other cases in which there was not a herpes there was hyperalgesia in these zones. In aortic disease sensitive areas can be found on the ulnar side of the left forearm.

3. Scherschmidt has tried Ehrlich's arsenic preparation, arsenophenylglyzin, in cases of sleeping sickness. This drug was heralded as being more satisfactory than atoxyl, after the use of which people frequently relapse. He has not found that this new preparation has fulfilled in man the expectations which seemed justifiable from animal experimentation. It is a dangerous drug to use and unless it is used for its full effect the results are not satisfactory. He thinks that success against this disease will depend on sanitation and elimination of the flies. [C. F., Jr.]

Berliner Klinische Wochenschrift. No. 8.

Feb. 20, 1911.

1. Stilles, B. *Gastric Ulcer and Phthisis.*
2. *Kayser, P. *Experiences with Two-Stage Prostatectomy under Local Anesthesia.*
3. Kleineberger, O. L. *The Treatment of Progressive Paralysis with Sodium Nucleinate.*
4. Arendt. *The Action of Radium Rays on Inoperable Carcinoma of the Uterus.*
5. Klinkert, D. *Experimental Gallstone Formation.*
6. Kentyles, J. *A New Hemolytic Reaction of the Blood Serum of Cachectic Patients.*
7. Bittorf, A. *Mydriatic Action of Organ Extracts.*
8. Scholz, L. *A Contribution to the Knowledge of Congenital Diaphragmatic Hernia.*
9. Hirschfeld, H. *Adalin, a New Sedative and Hypnotic.*
10. Saul, E. *Relations of Acari to Tumor Etiology.*
11. Joachimsthal. *The Care of the City of Paris for Children with Bone and Joint Tuberculosis.*
12. Schindler. *An Accurately Gaged Syringe for the Injection of 40% Oil of Dioxydiamidoarsenobenzol.*

2. The author explains his operation which is especially designed for the old and feeble. At the first operation under local anesthesia a suprapubic vesical fistula, of fairly large proportions, is made. The bladder is then drained by a permanent catheter and washed out several times a day. When the urine is clear, the prostate is removed. This is done under a local anesthetic of cocaine or novocain. The author reports a series of cases. [J. L. H.]

Zeitschrift für Klinische Medizin. Band 72.

Heft. 1 and 2.

1. *Sahli, H. *Advances in Sphygmobolometry or Diagnosis of Pulse Energy.*
2. Ziegler, K. *Clinical and Anatomical Paper on the Teaching of Chronic Lymphatic and Myeloid Leukemia.*
3. *Falta, W., Newburgh, L. H., and Nobel, B. *Interrelation of Glands with Internal Secretion. Relation of Overfunction to the Constitution.*
4. *Eppinger, H., and Hofbauer, L. *Circulation and Diaphragm.*
5. Jarussow, S. *A Reinfection in Relapsing Fever, and Its Influence on the Course of the Disease.*
6. *Bondi, S. *The Use and Action of Acetylsalicylic Acid in Typhus Abdominalis.*
7. *Bondi, S., and Katz, H. *Experimental Communication on Aspirin.*

1. Sahli regards sphygmobolometry — a method for carefully measuring the energy of the pulse — of greater importance than estimates of blood pressure and the form of pulse waves can possibly be, as this measures the power and capability of the heart; the others show only its attainments. The method is intricate and will not be described. The present article modifies radically the method which appears on this subject in the 1909 (fifth) edition of his "Lehrbuch"; it shows two principal and important changes, first taking into account the amount of air employed in the armlet, and, second, the introduction of a spirit manometer held in an horizontal position (to be standardized by a mercury one) which reduces inertia errors to a minimum.

3. The authors continue their study of glands with internal secretion. On administration of *adrenalin* the most constant effect is increase in blood pressure, which may be considerable and of moderate duration. Pulse frequency, usually increased, is, however, variable and may be irregular. Glycosuria produced by injection of adrenalin is independent of occurrence of increased blood pressure; if adrenalin fails to cause glycosuria, previous administration of atropine usually succeeds in bringing this about; pilocarpine (.01), on the other hand, inhibits the occurrence of adrenalin glycosuria. The contrary effect of these two drugs is here of particular interest in that neither of them has any evident effect on alimentary glycosuria, thereby pointing to different factors as cause of these two forms of glycosuria. Adrenalin always causes increased sugar output in active diabetes, without necessarily concomitant diuresis. In tetany, adrenalin brings on an attack. As adrenalin was given always subcutaneously at .001-gm. dose, and as the glycosuric, diuretic, leucocytic and pressor effects were obtained apparently without relation to each other, the authors conclude that differences in the organism alone explain the results.

*Thyroid* extract given over a period of three days always caused increase of pulse-rate and, except in diabetes, diminution of blood pressure. In the aglycosuric period of diabetes, thyroid medication causes glycosuria and shows little effect during the active stage, an opposite effect from adrenalin. A relative increase in number of mononuclear blood cells was almost constant. Headache, pain in the limbs, tremors, loss of weight and psychoses were less striking and less constant effects of thyroid administration.

*Pituitary* extract has no effect on glycosuria; its diuretic effect seems to be parallel with adrenalin.

The manifold and dissociated effects of adrenalin and thyroid medication upon the body are as yet inexplicable.

4. By use of the plethysmographic method the authors show graphically increased outflow of blood from the lower extremities when the diaphragm stands high; a diminished flow when low. This fact is of importance in relation to the position of the diaphragm in such conditions as emphysema and pleural effusion. The difference seems to depend upon changes in abdominal and intrathoracic pressures and also in size of the foramen quadrilatum in the diaphragm.

6. Bondi, after investigation on a number of cases, recommends aspirin in 0.25-gm. doses, two or three times a day, as antipyretic in typhoid fever. He finds that in these minute doses aspirin is almost specific in action, reducing temperature almost invariably within an hour and causing a reduction for from two to six hours of between 1.5° and 3° C. For comparison he used as control a corresponding dose of salicylic acid, of diaspirin, of diplosal, of triacetin and the full tub; none of these agents had nearly the antipyretic effect of aspirin. The author has never seen collapse from these small doses; sweating and chilliness occasionally.

7. Bondi and Katz, investigating the action of aspirin, determined (1) that it is practically unaffected by the gastric juice; (2) that it is very slowly split by an alkaline medium or artificial intestinal content; (3) that it is never excreted as aspirin, but as salicylic acid; (4) that aspirin in alkaline medium is *quickly split* by liver extract. Therefore, they conclude that aspirin is absorbed as such, is split in the body tissues and excreted as salicylic acid.

[J. B. A.]

DIE THERAPIE DER GEGENWART.

FEBRUARY, 1911.

1. BAGINSKY A. *Typhoid Fever in Children and Its Treatment.*
2. *HUBER, O. *Luetic Hepatic Fever.*
3. HÄNI, J. R. *The Strengthening of the Action of Various Narcotics, Especially Pantopon, by Scopolamine.*
4. KOHNSTAMM, O. *The Nature of Hysteria.*
5. LAQUEUR, A. *The Therapeutic Use of High-Frequency Currents.*
6. FRIEDBERGER, E. *The Nature and the Importance of Anaphylaxis.*

2. Huber observes that while it is well known that uncomplicated tertiary lues of internal organs is often attended with obstinate fever, it is less well recognized that such fever has characteristic properties and is of diagnostic value. It is remittent or intermittent in type and yields promptly to antisyphilitic treatment. The writer reports a case of syphilis of the liver with a characteristic temperature chart. The patient had suffered attacks of severe pain in the right hypochondrium with chills and fever for three years and was operated upon for gallstones but none were found. The liver was enlarged and histological examination of a piece showed gummatous nodules, Wassermann reaction positive. One injection of "606" cured the man and put an end to the fever. [L. D. C.]

REVUE DE MÉDECINE.

FEBRUARY, 1911.

1. *BARBÉZIEUX, G. *Beri-Beri: Its Pathogenesis and Treatment.*
2. LABBÉ, H. *Ammoniacal Nitrogen in the Formation of Urea in the Organism. II.*
3. *CECIKAS, I. *Digestive Tests by Diet.*

1. The author claims that beri-beri should not be classified as a disease entity. It has no definite pathology, etiology or symptomatology. It is rather a syndrome which manifests itself in predisposed individuals, in a word, in those with the "neuro-arthritic diathesis." The salts of sodium, the salicylate in particular, seem to exercise a great influence, not merely on the symptoms, but in cutting short the course of the process.

3. Cecikas does not advocate the use of the Schmidt-Strassburger diet as a test of intestinal function. This diet, he claims, is too bulky for the average individual, especially for those suffering from inanition, who are often subjected to such a test. The latter, while rejecting the diet in an undigested form in the early stages, adjust their organs to the overwork, so that normal digestion is evidenced in the latter part of the period. This unevenness of results is unsatisfactory. He advises a diet consisting of carbohydrate 300 g., albumin 100 g. and fat 100 g. By this means a lighter, more constant and more agreeable bill of fare can be prepared. [L. H. S.]

REVUE DE CHIRURGIE.

FEBRUARY, 1911.

1. *QUÉNU, E. *The Operative Treatment of Typhoid Angiocholecystitides in the Course of the Disease or During Convalescence.*
2. WEITZEL. *The Treatment of Cranial Wounds in Advanced Guards.*
3. *IMBERT, L., AND DUGAS, G. *The Remote Prognosis of Dislocations of the Shoulder.*
4. MONOD, C., AND VANVERTS, J. *Documents and Remarks on the Treatment of Arterial and Arterio-venous Hematomata.* (Conclusion.)

1. From a summary of sixty-seven cases of cholecystitis operated in the course of typhoid fever or during convalescence, Quénu concludes that in such cases cholecystectomy may be an operation of necessity but is never an operation of choice.

3. From a study of fifteen cases, the authors conclude that simple subcoracoid dislocations of the shoulder, promptly reduced, are followed by functional disturbances and phenomena of pain for several months. This temporary incapacity may become permanent, exceptionally on account of traumatic paralyses of the cords of the brachial plexus, much more frequently from scapulo-humeral peri-arthritis. Probably it is more often due to peripheral neuritides than to inflammation of the sub-acromial bursa. [R. M. G.]

IL POLICLINICO.

FEBRUARY, 1911.

1. ALESSANDRINI, P. *A Contribution to the Study of the Relations Between the Lipoid Content of Serum and the Wassermann Reaction.*
2. *GAVINI, G. *A Contribution to the Question of the Practical Value of the Wassermann Reaction in Syphilis.*
3. PONTANO, T. *An Experimental Contribution to the Knowledge of the Metabolism of Nitrogen and Uric Acid in Gout.*
4. FULCI, F. *On the Experimental Production of Endocarditis.*

2. Gavini concludes as follows from an exhaustive study of the Wassermann reaction in thirty-six cases of syphilis: A positive (strong) reaction is pathognomonic; if persistent, prognosis should be guarded. A doubtful reaction is of diagnostic value if it is confirmed by history and physical signs and other diseases can be excluded; its prognostic significance depends upon the stage and course of the disease and the length of treatment. A negative reaction does not absolutely exclude syphilis. There is a close relation between mercurial treatment and the Wassermann reaction and the test is a good index of the effect of mercury. [L. D. C.]

SURGICAL SECTION.

1. *LOFARO, F. *The Presence of the Gonococcus in the Circulating Blood of Blenorrhagics.*
2. *DUSE, A. *Histologic and Bacteriologic Researches on the Method of Grössich.*
3. CIGNOZZI, O. *Some Congenital Cysts of the Neck of Branchial and Parabranchial Origin.* (Continued.)

1. In 39 out of 67 cases of acute or chronic urethral blennorrhagia, Lofaro cultivated the gonococcus from the circulating blood.

2. From bacteriologic study of 95 operative cases, Duse concludes that Grössich's method with tincture of iodine is not inferior to other procedures for disinfection of the skin. [R. M. G.]

## Obituary.

### HENRY PICKERING BOWDITCH, M.D., LL.D., HARV.

THE death of Dr. Bowditch, which came at the end of a day of quiet and peaceful unconsciousness,[1] brought to a close a strong, courageous and useful life, marked from first to last by work accomplished, friendships formed and strengthened and honors fairly won.

It is now fully ten years since his serious malady (paralysis agitans) began to fetter his strong limbs, and for a long time past he had wished for the release of death. Activity and industry had been synonymous for him with living and breathing, so that the thought of being grasped in the tightening coils of this intangible and inexorable illness was intolerable to his spirit and he faced his fate unreconciled. In later years, however, he accepted the situation frankly and bent himself to recognize the many sources of happiness

[1] Dr. Bowditch became unconscious during an apparently quiet sleep on the day before his death and did not regain consciousness again, though he came to himself sufficiently to show some signs of response to simple requests. He had a slight facial palsy but no paralysis of the limbs. The respiration became very slow, sinking for a time to the rate of four a minute. The probable diagnosis was thrombosis of a vertebral or the basilar artery, due to his long-standing arteriosclerosis.

that still remained to him; and if his early attitude was characteristic of one tendency of his strong nature, another side came out quite as clearly in his gentleness and his readiness to appreciate the benefits that the hands of affection heaped about him.

Fortunately, the quality of his mind remained unchanged throughout his illness. To the end he retained a keen interest in public and private matters, and his sense of fun never deserted him.[1]

Dr. Bowditch came fairly by his good qualities, — his fidelity, his intelligence, his outspeaking honesty and fearlessness, and his public spirit. His ancestors on both sides were Essex County people who represented New England at its best. His grandfather, Nathaniel Bowditch, began his career by working his way before the mast, but long before his death he had become a very distinguished writer on navigation and mathematics, a man of international reputation. Nathaniel's second son, Ingersoll, the father of Henry Bowditch, was a successful merchant long honored for his integrity, good judgment and generosity. Mrs. Ingersoll Bowditch was the daughter of Benjamin R. and Mary P. Nichols, of Salem, and granddaughter of the fearless and stalwart Col. Timothy Pickering,[2] Secretary of State under Washington.

Henry Bowditch was born [4] and bred in Boston, and the friends who knew him as a boy still have vivid memories of the house on Summer Street, nearly opposite the end of Chauncy Street, which his father occupied for many years, in the day when that portion of the city was delightful with shade trees and sunny gardens and still boasted a few detached houses of colonial build.

Bowditch entered Harvard as an undergraduate in 1857 and was graduated with his class in 1861. In the autumn of that year he entered the Lawrence Scientific School and began to study chemistry, but the Civil War was breaking out and the two Bowditches, Henry first, Charles nineteen months later, enlisted for the field. Henry joined the First Massachusetts Cavalry as second lieutenant in November, 1861. His cousin, Nathaniel Bowditch, who fell at the battle of Kelly's Ford in March, 1863, and many other Boston men, also became members of this gallant regiment. Charles' appointment as second lieutenant, Fifty-Third Massachusetts Volunteer Infantry, dated from May, 1863, two months after his cousin's death. This was the beginning of four years of military service for Henry Bowditch, interrupted only by a furlough covering the winter of 1863, to admit of his convalescence from a bullet wound in the arm received while he was leading a charge at the action of New Hope Church. In March, 1864, he was honorably discharged with the rank of captain, to re-enter the service as major in the Fifth Massachusetts Cavalry (colored).

War and the army were both obnoxious to him except for the end they sought, but to this end he was ready and willing to devote himself. His army experiences made a deep impression, the effect of which came out incidentally in many ways, but with his characteristic reserve, which was stronger than at once appeared, he found it difficult to talk about them.

Major Henry L. Higginson well remembers Dr. Bowditch as he then appeared, a handsome, refined and home-bred looking youth, with a fondness and faculty for keeping face clean and clothing neat at periods when those attributes were a rarity. He remembers him also as being an upright and fine officer, often reserved and even unbending in his manner but unflagging in his faithfulness and unflinching in his courage. One day as they rode side by side through Sharpsburg, after the battle of Antietam, they talked together about the pains and pleasures of the soldier's life. Major Higginson said that he enjoyed it very well and had half a mind to make it his profession, but Bowditch declared that his feelings were the reverse of this and that he longed for the time when he could devote himself to scientific labors.

The First Cavalry played an active part in a number of engagements during its long service. It was not actually engaged at Gettysburg, but officers and men sat in their saddles through the long day as a part of the reserve column, waiting to be called out and Dr. Bowditch entertained himself by counting the discharges of the cannon from one or the other side as they fell upon his ear, and found them to recur about once a second through almost the entire day.

He resigned his command on June 3, 1865, soon after the close of the war, and in the autumn of the same year took up his scientific studies where he had left them off, re-entering the Lawrence Scientific School and taking Prof. Jeffries Wyman's admirable course in comparative anatomy. Later in the year he began in earnest to study medicine at the old North Grove Street school. He was graduated in medicine in 1868 (having received his A.M. in 1866) and immediately went abroad to study physiology, first at Paris, under Claude Bernard; then at Bonn, and finally at Leipzig, under the able, warm-hearted Professor Ludwig, then in the full tide of life and work. This truly great man and fine teacher became a personal friend of Bowditch, as of many others of his pupils, making them joint investigators and publicists with himself and giving them a generous share of credit. The writer was a special student in Leipzig during a portion of this time and gained a realizing sense of that brimming life of Ludwig's happy family of students, all destined to stand high among the world's teachers of their day and generation. Cyon,

[1] Only a week before his death Dr. Bowditch told the writer with great amusement the following story of his little grandson: The child, it appears, having been brought to pay a visit to his grandfather, sat watching his helplessness for a time and then asked him, "Are you sick?" On getting an affirmative answer the next question was, "What did you eat?"

[2] Deacon Timothy Pickering, father of Col. Timothy Pickering, had given evidence of the family boldness and patriotism by addressing to King George III an open letter (published in the *Essex Gazette* of Nov. 7, 1769) in which, after deploring the wasteful expenditure of the people's money by the royal government on needless "Pride and Luxury," he calls vigorously for economy and a redistribution of the taxes in favor of the poor. "I have," he writes, "an income of but eighty pounds sterling a year, including my own hands' labor; nevertheless I am freely willing to pay one-quarter part till my Public Debts are paid."

[4] Dr. Bowditch was born April 4, 1840, and died March 13, 1911.

Lauder Brunton, Uskimowitch, Mosso, Lankester and Kronecker were there, — all thereafter warm friends of Bowditch, — and Lépine, well-nigh the first Frenchman to show himself desirous of tasting the scientific fare that Germany was offering the world. First and last there were many other noted students, from Germany, Switzerland, England, Russia and other lands. The outbreak, in 1870, of the Franco-Prussian War stirred Leipzig profoundly and summoned several of these workers to their homes. Bowditch remained for a year longer, and when he returned, in September, 1871, it was with Selma Knauth, the daughter of Franz Theodor and Fanny Elizabeth Knauth, of Leipzig, as his wife, at whose hospitable home he had been long received as a welcome guest. It had been an eventful and notable two years that he had spent in the quaint old town, and he was never weary of talking over the pleasant memories of his stay. Professional trophies, too, he brought back with him, for he had done, in company with Ludwig, several pieces of excellent and important work upon the nerves and muscles of the heart, which were described soon after in the publications of the Leipzig Institute and soon were widely read. For a number of years afterwards the heart's action remained a favorite object of Dr. Bowditch's study.

It may well be believed that Dr. Bowditch arrived in Boston full of hope and vigor and ready to infuse new life into the study and teaching of physiology in his native land. He brought to this work fine traditions, the sense of responsibilities well met, the memory of inspiring friendships, the glow of German zeal, the power of German methods.

Dr. Holmes was still professor of physiology as well as of anatomy at the Harvard School, and Bowditch was made assistant professor of physiology and entered on his duties in September, 1871. In 1876 he was made full professor.

Good physiological laboratories in the German sense, that is, places where not only the professor himself could work, but where all who really wished to carry out researches, great or small, might find apparatus, materials and, above all, help, sympathy and discriminating criticism, were then practically unknown in the United States. Dr. Bowditch had strongly marked administrative gifts, a high sense of liberality and hospitality, and a remarkable mechanical inventiveness. To these qualities he could now add a knowledge of what research and what adequate laboratory equipment really meant. In the course of his professional career he founded successively three such laboratories in the three buildings to which he followed and guided the fortunes of the school, and the list would be a long one of the men who found in them the hand of welcome and the wise voice of counsel ready at their need.

As a lecturer Dr. Bowditch was clear and incisive rather than brilliant, but his methods were so well chosen, his arrangements were so orderly, his demonstrations so effective, he knew so well just what he wished to say, that he had little difficulty in holding the attention of his audience. The quality of his mind well fitted him for a teacher, for while ready to advance when the occasion called for progress, and entirely capable of taking a radical attitude in scientific as in public matters, yet his power of criticism and the distinctly judicial character of his mind inclined him to scrutinize the new and to conserve the old, and this tendency grew in him with his years. Most important point of all, he was a good teacher because he remained ever a good student. He was not, indeed, a prolific investigator in the largest sense, yet he never ceased experimenting and taking part in the experiments of others, and so kept his powers of study always fresh.

His best original contributions, besides those already mentioned, were his two prolonged studies into the laws of the growth of children; his demonstration of the non-fatiguability of nerves; the nature and modifications of the knee-jerk. But of lesser investigations there were many. Whatever he did was well and accurately done and his conclusions rarely courted the contradiction of his colleagues.

He did also an immense service to the cause of physiology, not only of this state, but of the country, in helping to resist the frequently recurring attempts to secure legislation unfavorable to the experimentation on animals absolutely required for medical research. Thoroughly humane himself, and warmly interested in the work of the Society for the Prevention of Cruelty to Animals, he saw that the first duty of humanity was to seek the amelioration of the lot of men.

In the faculty room of the Medical School his counsel became at once recognized as indispensable, and from first to last, when he rose to speak, he was listened to almost as a judge delivering his carefully balanced charge. He was appointed Dean June 25, 1883, immediately succeeding the much-loved Dr. Calvin Ellis, and it would be hard to imagine that difficult position filled with greater dignity and fairness or with a better sense of the work the school might do.

When it came to the question of new buildings, an undertaking of great risk, the fact that he was for it weighed heavily in its favor. His help in drawing plans for these extensive buildings was gladly sought and welcomed and it is well known that it was to his energy and courage, in association with those of his long-time friend, Dr. John Collins Warren, that the eventual securing of the building fund was mainly due.

In 1893 he resigned the position of dean. In 1900, feeling the shadow of illness beginning to creep over him, he began to withdraw from active work, and in 1906 he resigned his professorship altogether.

Dr. Bowditch's activity was by no means limited to his labors in behalf of physiology and medicine. The same sense of public obligation that sent him to the war led him to accept other positions of usefulness, such as member of the Boston School Committee, trustee of the Boston Public Library and of the Adams Nervine Asylum,

and president of the Boston Children's Aid Association, member of the Special Joint Committee on Health of the American Social Science Association, member of the Committee of Fifty to Investigate the Liquor Problem. He was also one of the original founders, with Dr. Weir Mitchell and Professor Chittenden, of the American Physiological Association, and coadjutor of Prof. W. T. Porter in establishing the *American Journal of Physiology*.

Numerous honors came to him in due course; degrees of Letters, or of Science, from the universities of Edinburgh (1898), Cambridge (1898), Toronto (1903), Pennsylvania (1904), Harvard (1906), besides various recognitions of more private sorts.

One of the last times that he appeared in public was in Sanders Theater at the ceremonies of dedication of the new Medical School buildings. The occasion was a memorable one, and Dr. Bowditch's impressive figure, clad in the scarlet robes of his Edinburgh doctorate, and seated at the front of the platform, side by side with Dr. Warren, made a fitting center to the striking scene.

A word must be said in closing about Dr. Bowditch's private and social life. Strong as was his sense of public obligation and of public trust; grave and even stern as his expression, speech and manner could become when occasion seemed to him to call for gravity or sternness, he had nevertheless a side of gaiety and lightness without knowing which it was impossible to know him. Whether as host at his own table or as guest at a friend's, on every occasion — and many were found — when his hearty laugh had an excuse for making itself heard, — as kite-flyer, mountain climber, inventor, photographer, old furniture maker and repairer, — in all these capacities, and many more, though each pleasant toil was marked with the never-wanting stamp of fidelity, thoroughness and honesty, he showed a humor, kindliness and charm which made him a delightful and most genial friend and comrade.

It was in the thoroughly free life of the Adirondacks camp, to which through twenty years he looked forward with such pleasant longing from one summer to the next, that these qualities came most strongly to the front. No one could have entered with more zest than he into the rich informal pleasures of that enchanted spot. There reserve and formality could be laid aside and free play allowed to the instincts of hospitality and sociability and the playfulness of boyhood at its best.

Many friends came there as his guests, among them several colleagues, as Sir Michael Foster and Professor Waller, whose acquaintance he had made during an extended visit to England, and a number of companions of the pleasant Leipsig days — Brunton, Kronecker and Mosso, now no longer living. A ledge on one of the spurs of the giant mountain near the camp was dedicated to Mosso with amusing and mock stately ceremonies and still bears an inscription with his name. This compliment was delicately repaid by him later, through the dedication of a *Lago di Bowditch*, in Italy,[1] to his former host.

His widow, five daughters, two sons and ten grandchildren survive him. May his fine qualities live on in them and be transmitted to the generations yet to come!

## Miscellany.

### MEDICAL INSPECTION OF SCHOOLS IN MINNEAPOLIS.

In the issue of the Journal for March 2, we noted the recent resignation of Dr. Silas H. Ayer as chief school physician of Boston, and the comments made by him and others on the present condition of the medical inspection of school children in this city. In this connection it is of interest to consider some suggestions in a letter published on Feb. 27 in one of our daily papers:

"I have been reading with great interest the discussion in your news columns and editorial page in regard to the medical inspection in schools. I have seen no mention made of what, to my mind, is the key to the whole situation, that is, the fact that any properly co-ordinated system of school medical inspection should be absolutely and entirely under the control of the school committee. In no country in the world except our own is the medical inspection in schools under any other authority. In our own country the majority of cities have given the control of this inspection to the board of education, and the intent of the Massachusetts law was to throw it under the same authority as soon as possible.

"In New York, where the inspection is under the control of the board of health, the superintendent of schools in his report for 1907 says: 'Dual responsibility in the schools, that of the board of education and that of the department of health, always has resulted and always will result in confusion and inefficiency in the work effected. It is owing to this dual responsibility that the large annual appropriation made by the city for the physical examination of the school children is to a great degree wasted. Efficient service will be obtained only when the board of education is made solely responsible for all the work that goes on in the schools.' Superintendent Maxwell is still of the same opinion, and some of the principals of this city who recently interviewed a number of the inspectors in New York report that the inspectors themselves say that the work should be wholly under the control of the board of education.

"The board of health is primarily interested in the checking of contagious disease. Facts collected all over the country show the number of cases of contagious diseases, if we exclude pediculosis, amounts to only about 2% of the number of children. The work for the other 98% is primarily an educational matter, and so, for the matter of that, is the checking of contagious diseases in the schools. If Boston is at last

[1] In Italian Alps, "Cabana Margherita," near the high altitude observatory erected by Professor Mosso.

going to throw off the incubus of politically appointed school inspectors, the only way to accomplish that purpose definitely and finally is to take it out of the control of the mayor's office and his political satellites.

"CHARLES H. KEENE, A.B., M.D.,
*"Supervisor of Hygiene and Physical Training, Minneapolis Public Schools.*
"MINNEAPOLIS, Feb. 24."

Even though one may not agree with Dr. Keene's opinion, it is worth while, at a time when changes are likely to be made in our own method of medical inspection in schools, to consider the point of view of a supervisor in his position in one of our large cities.

## RESOLUTIONS ON THE DEATH OF DR. JAMES H. DENNY.

AT a recent meeting of the Boston Society of Psychiatry and Neurology, were adopted the following resolutions on the death of Dr. James H. Denny:

"By the death of James Henry Denny the Boston Society of Psychiatry and Neurology has lost an honorary member who was one of its founders and an active and faithful friend to the society in its earlier years. The members of the society mourn the loss of an earnest and diligent student, a high-minded gentleman and an unselfish and kindly friend."

(Signed) PHILIP COOMBS KNAPP.
HENRY R. STEDMAN.
WILLIAM N. BULLARD.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MARCH 11, 1911.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | 1,508 | 450 | Waltham | 9 | 3 |
| Chicago | 751 | 207 | Brookline | 11 | — |
| Philadelphia | — | — | Chicopee | 6 | 3 |
| St. Louis | — | — | Gloucester | 9 | 3 |
| Baltimore | — | — | Medford | 4 | 1 |
| Cleveland | — | — | North Adams | 4 | 2 |
| Buffalo | — | — | Northampton | 12 | 5 |
| Pittsburg | — | — | Beverly | 6 | — |
| Cincinnati | — | — | Revere | 1 | — |
| Milwaukee | — | — | Leominster | 3 | — |
| Washington | — | — | Attleboro | 7 | 2 |
| Providence | — | — | Westfield | 9 | — |
| Boston | 269 | 72 | Peabody | — | — |
| Worcester | 44 | 9 | Melrose | 4 | 1 |
| Fall River | 41 | 15 | Hyde Park | 8 | 2 |
| Lowell | 47 | 11 | Woburn | 5 | 0 |
| Cambridge | 36 | 1 | Newburyport | 3 | 1 |
| New Bedford | 47 | 9 | Gardner | 2 | — |
| Lynn | 23 | 5 | Marlboro | — | — |
| Springfield | 29 | 4 | Clinton | 2 | — |
| Lawrence | 33 | 12 | Milford | 5 | 0 |
| Somerville | 15 | 7 | Adams | 7 | 4 |
| Holyoke | 20 | 11 | Framingham | 2 | 0 |
| Brockton | 24 | 6 | Weymouth | — | — |
| Malden | 10 | 2 | Watertown | — | — |
| Haverhill | 13 | 2 | Southbridge | 0 | — |
| Salem | 5 | 3 | Plymouth | — | — |
| Newton | 8 | 1 | Webster | 0 | — |
| Fitchburg | — | — | Methuen | 2 | — |
| Taunton | 18 | 5 | Wakefield | — | — |
| Everett | 12 | 2 | Arlington | 3 | 1 |
| Quincy | — | — | Greenfield | 3 | 1 |
| Chelsea | 11 | 1 | Winthrop | — | — |
| Pittsfield | 14 | 6 | | | |

## SOCIETY NOTICE.

THE NORFOLK DISTRICT MEDICAL SOCIETY.—A regular meeting of the Society will be held at Masonic Temple, 171 Warren Street, Roxbury, Tuesday, March 28, at 8 o'clock. (Telephone, Roxbury 2275-3.) Business. Communications: "Hypersensitiveness to Serum or Anaphylaxis," Theobald Smith, M.D. Discussion by Edwin H. Place, M.D. Refreshments after the meeting. There will be no meeting in April. The Annual Business Meeting and Dinner of the Norfolk District Medical Society will be held Tuesday, May 9. The Censors will meet at Masonic Temple, Roxbury, Thursday, May 11, at 2 P.M., for the examination of candidates.

BRADFORD KENT, M.D., *Secretary*,
799 Blue Hill Ave., Dorchester.

## RECENT DEATH.

DR. WILLIAM WARREN POTTER, who died on March 14 at Buffalo, N. Y., was born in Strykersville, N. Y., on Dec. 31, 1838. He received the degree of M.D. from the Buffalo University Medical College in 1859, and immediately began the practice of medicine. In 1861 he was commissioned assistant surgeon of the Forty-Ninth New York Infantry, and served with his regiment throughout the Civil War, being mustered out with the brevet rank of lieutenant-colonel. Dr. Potter had been editor of the *Buffalo Medical Journal* since July, 1888, and was a member of many medical societies. He is survived by two daughters.

## BOOKS AND PAMPHLETS RECEIVED.

Treasury Department. Hygienic Laboratory Bulletin No. 71. 1. Some Known and Three New Endoparasitic Trematodes from American Fresh-Water Fish. By Joseph Goldberger. 2. On Some New Parasitic Trematode Worms of the Genus Telorchis. By Joseph Goldberger. 3. A New Species of Athesmia from a Monkey. By Joseph Goldberger and Charles G. Crane. Washington, 1911.

The Cancer Problem, A Statistical Study. By C. E. Green, F.R.S.E. Edinburgh: Wm. Green & Sons. 1911.

Plastic and Cosmetic Surgery. By Frederick S. Kolle. D. Appleton & Co. 1911.

Practical Dietetics. By Alida Frances Pattee. New York, N. Y.: A. F. Pattee. 1910.

Modern Treatment. By Hobart A. Hare, M.D. Lea & Febiger. 1910.

Ninety-Seventh Annual Report of the Trustees of the Massachusetts General Hospital. 1910.

Report of the Butler Hospital, Providence, R. I., Jan. 25, 1911.

Festschrift zur Vierzigjahrigen Stiftungsfeier des Deutschen Hospitals. New York.

Vierzig Jahre des Deutschen Hospitals und Dispensary in der Stadt New York.

Inebriety, A Clinical Treatise on the Etiology, Symptomology, Neurosis, Psychosis and Treatment and the Medico-Legal Relations. By T. D. Crothers, M.D. Cincinnati, O.: Harvey Publishing Co.

Public Health Bulletin No. 44. Acute Anterior Poliomyelitis. By Wade H. Frost, Washington.

Hygienic Laboratory Bulletin No. 74. Digitalis Standardization and the Variability of Crude and of Medicinal Preparations. By Worth Hale, Washington.

A Preliminary Report on the Mortality of Cancer in the United States as given by the Census of 1910. By Walter B. Chase, Brooklyn, N. Y. Reprint.

Annual Report of the Lynn Hospital for the Year 1910.

Manual of Cystoscopy. By J. Bentley Squier and Henry G. Bugbee. New York: Paul B. Hoeber. 1911.

Progressive Medicine, March 1, 1911. Lea & Febiger.

Forty-first Annual Report of the State Board of Health of Massachusetts.

A Textbook of Surgical Anatomy. By William Francis Campbell, M.D. W. B. Saunders Co. 1911.

Diagnostic and Therapeutic Technic. By Albert S. Morrow. W. B. Saunders Co. 1911.

Proceedings of the Canal Zone Medical Association for the Year 1909, April, 1909, to March, 1910. Quartermaster's Department, Mount Hope, Canal Zone.

Summary of Official Reports on the Metric System. By John H. Twigg, M.A. The Decimal Association, London, E. C.

Twenty-Sixth Annual Report of the Adirondack Cottage Sanitarium, Saranac Lake, N. Y., November, 1910.

Medical Supplement, Annual Report of the Adirondack Cottage Sanitarium. By Lawrason Brown, M.D. 1910.

Report of the Massachusetts Consolidated Mining Company for the Year 1910.

## Address.

### THE NURSE AND THE PUBLIC HEALTH.*

BY ANNIE W. GOODRICH, R.N.,
*Inspector of Training Schools of the State of New York.*

With honors that are accorded few men and fewer women, a few months ago England laid one of her daughters to rest. In the great Cathedral of St. Paul, a vast assembly knelt reverently as the Church gave thanks to God "that the sorrows and sufferings of his servant Florence were over." England lost a great patriot, the world lost a great humanitarian and a great teacher of sanitation and hygiene. And the shadow that always falls with the passing of a great soul was deepened for us in the United States, for only a short time before we had lost a disciple of Miss Nightingale, a great teacher and to some of us more than a teacher, a much-needed counselor and a dear friend. Death did not come to her gently at twilight, but in the full vigor of a splendid womanhood, with a suddenness and harshness to which it seems difficult to be reconciled; she was torn from the home she loved and the children who needed her, and hurled into eternity. At this very time there lay on her desk the opening lines of one further effort to present to the public the subject so near to both, — the Education of the Nurse. She was to have read this paper at the exercises in commemoration of the fiftieth anniversary of the founding of the first training school for nurses by Florence Nightingale.

The Crimean War and a grateful English public produced the systematized course of training for nurses that Miss Nightingale had already voiced the need of, "the essentials of which," she says, "may be shortly given thus:

(*a*) "That nurses should be technically trained in hospitals organized for the purpose.

(*b*) "That they should live in homes fit to form the moral lives and discipline."

How almost with bitterness she must have realized what such schools would have meant to her country when with her little band of forty nurses she faced that awful barracks hospital of Scutari, of which it is written that "when it had in it 2,400 patients, the rows of beds ought to have been 2¾ miles long, but so great was the overcrowding that the length must have been much less, perhaps only two miles long." They said it was her modest nature that made her shrink from the welcome of her appreciative countrymen and steal back unrecognized to Lea Hurst. I think it was not that; modest she was, but I think she could not face rejoicings and adulations with that terrible tragedy still haunting her — "Those lives, those lost lives," wrote Kinglake, in a burst of sorrow, "that timely care might have saved."

A great public health movement has recently swept over the country. A public aroused to the importance of the national health are investigating social evils that are producing crime and disease, that are depleting the population through infant mortality and limiting its efficiency through mental defectives.

And each investigating commission's verdict echoes Kinglake's cry, "The lives, the lost lives, that timely care might have saved," and what England needed then in time of great war, the whole world is asking for to-day in times of peace, — a body of trained workers to be the household guardians of the public health, teaching sanitation and hygiene in the homes, the schools and the institutions. To-day we have the training schools that Florence Nightingale hoped for, over 1,000, with 200,000 hospital beds and 29,000 pupils, but are not these 29,000 pupils trained for the individual need of the institution rather than for wider service of the state? A study of any group of institutions in the United States would bear this out. A recent comparison of the statistics of 125 hospitals shows the division of services to be approximately thus: 70% surgical, 20% medical and the remaining 10% to be divided between obstetrics and children, in favor of the former. A few have affiliated for obstetrics, and fewer still for pediatrics. A few have made some attempt at the preliminary course, by which we mean the essential theory with instruction in the simpler nursing procedures preparatory to the daily practice in the wards, a preparation that has long been deemed essential and struggled for by teachers of nursing and whose contention is sustained by our leading superintendents of hospitals recently studying in its broader aspects the education of the nurse. But so limited is the housing capacity, indeed, so often overcrowded is it, and so difficult is it to provide for the expense of needed additional supervisors and teachers, that I think but few institutions could establish such preparatory courses if they would. All this simply goes to prove that the hospitals are training the nurses for hospital work, and yet the greatest need of the country is for intelligent nursing in the homes. The hospital that trains the nurse in surgery is doing service for that hospital mainly and is doing a minimum service for the state. The same is true of the hospital that trains strictly in any specialty, whereas the state needs nurses trained and experienced in all phases of nursing.

On the other hand, we may ask in defense of this procedure of the hospital, Is it reasonable in these days of scientific advancement, requiring so much more thorough and comprehensive preparation of the nurse for public service, to lay this burden on private institutions? Certainly not beyond the point of equal service rendered. Is it reasonable for the state to expect a uniform result in any profession when the preparation of the members of such profession is left with each individual school, to be determined by whatever that school has to offer? It is not strange that a horizon dependent on a single point of view is somewhat narrowed, as the following anecdote, one of many, demonstrates: Contending recently for a broader training of the pupils in an institution whose service was almost wholly surgical, I was

* Delivered at the graduating exercises of the Training School of the Massachusetts General Hospital on Jan. 24, 1911.

told that the thorough training in surgical technic in an institution in which the equipment and administration was evidently above criticism more than prepared the nurse for all the medical work for which she would ever be called; that with our present excellent sanitary conditions, typhoid was a thing of the past; and I almost believed it, until, a week later, when in a town less than ten hours away, an inquiry as to the proportion of medical cases to surgical elicited the information that while the proportion was ordinarily 1 to 2 in favor of surgery, this year the former had been greater, owing to the epidemic of typhoid fever during the summer that had filled all of the medical beds and many of the private rooms. But if the institution cannot bear the burden of the broad education of the nurse, where shall we place it? Why not upon the state? Has the state that looks after its public schools, its teachers, its highways and its waterways, its fish and forestry, no responsibility in the preparation of its sanitary teachers? Could it not and should it not provide, if not in colleges, in the secondary schools, a preparatory course for those who would be nurses, courses that would be taken by every girl and woman who is wise. Miss Nightingale, preaching the Gospel of Prevention, said this fifty years ago:

"If the laws of health, as far as regards fresh air, cleanliness, light, etc., were taught to mothers and schoolmistresses (as well as nurses), would this not prevent some children being killed, some evil being perpetuated? On women we must depend, first and last, for personal and household hygiene — for preventing the race from degenerating inasfar as these things are concerned. Would not the true way of infusing the art of preserving its own health into the human race be to teach the female part of it in schools and hospitals, both by practical teaching and by simple experiments, inasfar as these illustrate what may be called the theory of it?"

And should the state not go still further and require that every institution maintaining a nurse training school with a three *years'* (note the emphasis) course shall provide, and that every nurse seeking to pursue her profession shall give evidence of having had, a definite experience under qualified teachers in properly equipped departments in the care of the child, in the care of the mother, in the care of the medical case as well as the surgical, in the care of the insane as well as the sane. Not any one would deny, I think, that maternity cases cared for in general wards do not provide proper experience in obstetrics; that a few sick children even in a separate ward supplemented by an extensive course of lectures is not a course in pediatrics. No one will deny that a complete and modern operating room, an active service, bare wards and aseptic furniture that prohibit the patients having little personal comforts, even the necessary toilet articles, without the properly constructed and equipped accessory departments, such as diet kitchens, pantries, etc., as important for the health restoring and safeguarding of the patients as the drugs or dressing, are not teaching fields, or rather they are teaching fields much to be deplored.

And if these limitations exist, as indeed they do, should not the state control, as it does in one country at least, and perhaps more, all institutions for the sick, making it necessary that evidence of sufficient funds to properly equip and maintain them shall be given, and wherever new institutions are being contemplated, requiring the submission of all hospital plans to a commission composed of hospital experts, one of whom shall be a nurse. I believe I am quite within the bounds of truth when I assert that thousands of dollars are spent yearly in trying to remedy, in recently constructed institutions, errors in construction and equipment that it is too late to ever wholly remedy, errors that the advice of such a board could not fail to avert.

And for our teachers, how are they prepared? If there are 1,000 schools of nursing, there are at least 3,000 qualified teachers needed in these schools alone. There are 566 district nursing associations with 1,400 workers, every one of whom to make her work of the far-reaching value in the community that it might be should have had some further preparation than just her training at the bedside of the sick. The Division of Child Hygiene of the Health Department in New York City alone, and there should be such a division in every city in the land, employs 143 nurses, of whose preparation the same thing could well be said, if the conclusions of the Bureau of Municipal Research, which I quote in part, are correct:

"The possibilities of such a division, progressively and efficiently administered, are beyond prophecy. A marked reduction in infant mortality, a higher level of health and vitality among children who live, and greater efficiency of the school system due to the increased ability of children to benefit by their instruction — not merely the application of remedies, but the discovery of the causes and methods of prevention of physical defects and low vitality; these direct results may reasonably be expected and demanded. More remote and less demonstrable results may be hoped for in the way of increased industrial efficiency, of correspondingly decreased poverty and dependency, and of decreased truancy and delinquency that now too often lead to wasted or even criminal lives."

I think I am correct in stating that there is just one college, not in the United States, but in the whole world, that offers courses for the nurse educator. The Teachers' College of Columbia University opened its doors to nurses in 1900 and since then little groups of women, the largest class we have ever had, the present, numbering 32, have entered to prepare themselves to be administrators and teachers in training schools for nurses. With no endowments, mainly supported by contributions from nurses and a few of their friends, this little sub-department, called the Course in Hospital Economics, has struggled on. The appointment by Dean Russell in 1904 of the most brilliant of our teachers to a chair in the college, which was made to include our little course,

established it more firmly, and last year a public-spirited citizen in New York, Mrs. Hartley Jenkins, through a large endowment, made possible at last what had been hoped for all these years — a Department of Nursing and Health. We rejoiced that Mrs. Jenkins' gift came before Mrs. Robb was taken from us. As Miss Nightingale's personal experience in the little school at Kaiserworth and in the hospitals of Paris confirmed her belief in the systematized course of training for nurses, so Mrs. Robb's actual experience as a teacher and as an organizer of two schools of nursing convinced her of the necessity, if the pupils were to be efficient and the organization effectual, of a definite preparation for the more advanced service of administration and teaching. Above all other departments of nursing, this was her child; from its inception to the day she died, she fought and worked and prayed for it. It was a teacher's bequest to her profession, and she could have no more fitting memorial than the scholarship fund that is being raised by the nurses throughout the country to make possible with so much less struggle and hardship the preparation of our women for the administrative and teaching positions that so badly need them. We would wish that the response to this tribute should come not only from nurses, but from every citizen interested in institutions for the sick and in the social welfare, and that every board of trustees would feel it possible to make a contribution that would insure the preparation of one or more of their graduates for executive work. We ask this, as Mrs. Robb did, for the public, not the nurse.

And now above all, what is our last and greatest need which cannot be met by endowments, and for which I fear there is no appeal to the state?

In an eloquent address in behalf of the Citizen Army Bill, for the home defense, Lord Roberts said "that every man should esteem it an honor to help in the defense of his country; every woman should feel that the children given to her are at the disposal of her country."

Our country needs her daughters, and I fear our mothers are withholding them. Would they say that the life of the nurse is a life of sacrifice, I would reply that the healthiest, happiest women I know are nurses. Would they say that they cannot submit their children to the severity of the preparation, I say to-day what those upon whom the doors of their alma mater are closing to-night will say to-morrow that "the happiest and most satisfying hours I have known in my whole life were spent in the wards of the hospital in which I took my training." If they would shield them from the knowledge of suffering and evil that such preparation involves, I would ask if any knowledge which will help the wonderful structure that God has given us as the container of his divine essence to better serve the state should be withheld from any man or woman.

There are diseases more devastating than any wars that might be prevented. There are eyes that are sightless that might have seen. There are clouded minds that call for the most skillful and intelligent ministration, that with such care might be restored to lives of usefulness and to a normal vision. There are poor diseased bodies that must labor but which might be helped to have the healthy bodies that make labor a joy, not a curse.

Once more, her call sounds in our ears:

"The Son of God goes forth to war.
Who follows in His train?"

"Oh, daughters of God, why are there so few of you to answer?"

To you who have this evening become my professional sisters, I extend an eager welcome. Our need of you is very great, and all the greater because of the richness of your opportunities. It has been your privilege to come in daily contact with some of the greatest minds of the medical world, to serve in an institution broad in its policies, thorough and comprehensive in its instruction, complete and modern in its equipment. You have been placed under a superintendent to whom no higher tribute could be paid than to say that she counted neither time nor cost in preparing herself to meet her great responsibilities; than to say to those of you who desire to prepare yourselves to serve in the institutions, as I earnestly hope some will, go and ask your superintendent not what you shall do, but what she *did*, and follow her example.

Your presence here to-night is evidence of the steadfastness of your purpose, of your fitness for the tasks that lie before you. The future is yours; go out, I beg, and demonstrate the highness of your calling and the value of your preparation. And if your trained eyes and hands and mind are but the servants of your heart, you cannot fail. Teachers you will be whether you will or no, whether the scope of your work is wide or limited; teachers whether by precept or by example. And who shall ever dare to estimate the value of, or limit the bounds of, the humblest example. Long after the textbooks that we have loved to teach from are replaced by ones more modern, the pupils of the training school will still bear the stamp of the splendid, joyful, living personality of their first head. The writings which alone should make their author immortal may lie untouched on dusty shelves, but the thousands of lamps lighted by the little lamp that broke the gloom of Scutari will never be extinguished. Remember that the greatest teacher that ever lived, before whom millions have bowed and said, "Master," wrote once only and that once in sand.

## Original Articles.

### FIBROUS STRICTURE OF THE RECTUM.*

BY JAMES P. TUTTLE, M.D., NEW YORK.

The title, "Fibrous Stricture of the Rectum," has been adopted to distinguish all other constrictions of this organ from those due to neoplasm, whether malignant or benign; therefore, we shall

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not refer to the latter condition, but confine ourselves to those which have no neoplastic characteristics. Stricture of the rectum is bound by no hard and fast rules as other conditions of this organ are; in fistula one may always say, Incise; in hemorrhoids, Clamp or tie; in cancer, Extirpate; but in stricture, the almost infinite variety of its causes, the changing physical characteristics and the various methods of treatment, depending upon these causes and the state of the parts, calls for exercise of greater judgment and experience than almost any other rectal condition. I use the term "condition" advisedly, for stricture in itself is not a disease, but the result of injury, irritation, ulceration or surgical interference, and must be studied and treated from its etiological point of view as well as from that of the physical or pathological conditions. In treating this subject, we shall adopt the modern anatomical divisions, as follows:

Anal canal — comprising that portion of the intestinal canal from the margin of the skin to the semilunar valves of Morgagni.

Rectum — from the free margin of the valves to a point about opposite the third sacral vertebra where the gut begins to be surrounded by peritoneum.

Pelvic colon or sigmoid flexure — comprising that part of the tract from about the third sacral vertebra, or beginning of the true mesosigmoid, to the lower end of the descending colon.

This division was first advocated by Treves and is not only anatomically correct, but "it gives to the organs definite limits; it separates the mobile from the immobile portions of the gut; it marks the line where the course of blood supply changes; it indicates the point where the three longitudinal muscular bands of the colon spread out and become more or less equally distributed about the gut; and, finally, it marks a point at which there is always a decided narrowing of the caliber indicating the juncture of the rectum and the pelvic colon."

The sigmoid, on the contrary, is a movable organ held only by the mesosigmoid and completely surrounded by peritoneum. It may be resected and the ends reunited by lateral or end-to-end anastomosis without the stricture recurring. The rectum, however, being surrounded by muscular and fibrous tissue in which inflammation and connective tissue deposits are prone to occur, cannot be excised or united end-to-end without an almost certain redevelopment of fibrous tissue and subsequently stricture at the point of reunion. The great dissimilarity of the pathological conditions found in the two organs renders it impossible to treat strictures in one upon the same lines as in the other, and we have, therefore, deemed it wise to confine our remarks strictly to conditions involving the anal canal and rectum.

The anal canal measures about 16 to 20 mm.; the rectum, 10 to 15 cm., somewhat less in women. All strictures of the rectum proper are, therefore, within the first six inches of the anal aperture.

## NATURE OF FIBROUS STRICTURE.

The nature of fibrous stricture, as has been well said by Mr. Cripps, "is to be regarded as the result of some irritation or inflammation affecting the parts." For many years it has been claimed that stricture of the rectum develops as an obscure deposit in the wall of the gut, due to constitutional disorders, chiefly syphilis, and unassociated with injury or pathological lesions. It was held that ulceration and destructive lesions of the mucous membrane were secondary to the stricture and that they were incurable without the removal of the stricture. Such a doctrine was advanced by Trelat and Forniere and led to a most unwise and ineffectual treatment of this condition. These views have in recent years been disavowed, and the profession now are practically unanimous in their belief that all strictures of the rectum, except the perirectal type, *have their origin in some previous intrarectal injury, irritation or ulceration.* As Mr. Cripps says, the causes of stricture are "first, the tendency of fibrous tissue, subject to inflammation, to become hypertrophied and contracted"; second, "the tendency of muscular fiber, when subject to undue and persistent nerve irritation, to undergo fibroid degeneration, with permanent atrophic contraction of its fibrous element."

The walls of the rectum are composed of four layers — the mucous, the submucous, the circular and the longitudinal muscular fibers. Outside of these the rectum is surrounded by the levator ani, the pelvic fascia, the perineal fascia and above by the peritoneum. The process of formation of stricture consists first in an inflammation or irritation in the organ, — this inflammation causes a destruction of the mucous and submucous tissues, — and, if the process ceases here, healing will occur without any material contraction of the organ; if, however, the process extends into the muscular layer, at whatever site, it increases the circulation and round-cell deposits, and when this has once been established it will follow the lines of the intermuscular fibrous bands which surround the rectum and will cause their hypertrophy, the compression, and subsequently the atrophy of the muscular fibers; the tendency of these fibrous bands to persistently contract will result in a narrowing of the caliber of the gut to a greater or less degree, according to the nature and extent of the inflammation.

This inflammation may be the result of ordinary infection or traumatism, surgical procedure, specific conditions such as syphilis, tuberculosis and dysentery. The process is the same in any case, although the pathological results may differ in detail, as will be referred to later on.

## MUSCULAR SPASM.

The influence of muscular spasm an an element in the production of stricture has long been a mooted point; some writers have claimed a pure spasmodic stricture, and I must say I have seen such strictures at the rectal-sigmoidal juncture; they are temporary, however, and, with patience,

they can be overcome, notwithstanding they may give the patient great inconvenience at times. A permanant spasmodic stricture is inconceivable, but shortening of the muscle and its accompanying fibrous bundles, due to frequent and prolonged spasm, may undoubtedly exist. Ball and Cripps lay great stress upon the spasm and contraction of the levator ani as a cause of rectal stricture, and cite it as parallel to the shortening of the ham string muscles in knee-joint diseases. I have never been able to convince myself that I have seen a positive demonstration of this type of stricture.

### CONGENITAL STRICTURES.

Besides these two causes of stricture, there is one other — congenital deformity — which has to be borne in mind. I say "deformity" because in the beginning these conditions are not true fibrous strictures, but the result of imperfect absorption between the layers of the epiblast and the hypoblast; there is practically no fibrous tissue at first but purely elastic tissue, which dilates and usually disappears upon a few dilatations if recognized early in life; if, however, they are unrecognized, the passages of fecal matter through the narrow caliber may set up an irritation and later on, in puberty or adult life, they may develop into true stricture, as I have seen in several cases.

### PERIRECTAL STRICTURES.

There is one type of stricture which can hardly be explained by the causes we have described above. A certain number of patients complain of rectal pain upon the passage of feces, whether hard or soft, upon walking or standing or upon an accumulation of masses in the rectum, yet careful examination of this organ shows no ulceration or local lesions to account for same. Digital examination does show, however, string-like, broad, annular or tubular contractions of the rectal wall, without any thickening of this organ and with the mucous membrane freely movable over the constriction. Such strictures are due to perirectal affections — they are usually post-operative or inflammatory disorders of women. The string-like strictures are occasioned by very fine adhesions or plastic bands in Douglas's cul-de-sac; they are never below two inches above the anus; are associated with many reflexes and almost always follow an attack of ovaritis or salpingitis, or pelvic peritonitis.

The broad annular strictures may be high or low; they are due to plastic deposits, adhesions of the broad ligaments or uterus across the rectum, or, as the writer has seen in two cases, practical obliteration of Douglas's cul-de-sac by adhesions of its walls and contraction around the rectum. This is not an infrequent result of complete hysterectomy and of superior pelvirectal abscesses. Neither of these types of stricture completely surround the rectum; they involve from one half to two thirds of the organ, are only sensitive anteriorly and laterally, and are not necessarily associated with any interior lesions of the rectum.

The tubular type of perirectal stricture, formerly considered always syphilitic, has been recently shown by Reynier and Quénu to be of undoubted tubercular origin, and usually if not always due to a tubercular deposit around the rectum.

Strictures are ordinarily divided according to their etiological factors and their physical characteristics; and it is difficult to say which is the more important, as one must consider them from both points of view in determining the proper line of treatment. The etiological factors in the production of fibrous strictures may be enumerated as traumatic, simple inflammatory, dysenteric, syphilitic and tubercular. Any condition which excites a chronic or destructive inflammation involving the muscular wall of the gut may be followed by a fibrous deposit and subsequent contraction, causing stricture. Operative or accidental traumatism of the walls of the rectum or anal canal may become infected and result in contraction of the rectal caliber, — a large majority of strictures which have come under my observation have been of this type. Most of these have followed operations for hemorrhoids, by improperly done Whiteheads, ligature and excision; two from clamp and cautery; a number from fistula; and twenty of greater or less degree from extirpations. In my own cases I have had very few post-operative strictures other than those following resection and extirpations. One of these was from a Whitehead operation in which my house surgeon, thinking there was too much oozing, removed the dressing and packed the rectum without introducing a proper speculum, — not wisely but too well, — for he tore the flap of mucous membrane that was sutured to the skin loose from its moorings and carried it up into the rectum ahead of his packing, thus turning the pumping vessel loose into the upper cavity and allowing the hemorrhage to continue. I was called after the patient was in a dangerous condition from shock — caught hold of the cuff that had been carried up into the rectum, brought it down and resutured it to the margin of the anus, after having stopped the hemorrhage. The result was imperfect union, a fibrous deposit and a very intractable stricture of the anal canal.

In over 4,000 cases of hemorrhoids operated upon by various methods, this is the only permanent stricture that has occurred in my practice from this procedure. McGavin, however, states that the clamp and cautery operation is the most fertile source of stricture that he has seen in his large experience. There must be some difference in the method in which this operation is performed here and abroad, else I would have seen it in my practice, as I use this method in 80% of my cases. I have seen three cases of stricture in which the clamp and cautery operation was said to have been done; in one of them I should say that amputation by the Paquelin had been employed, as two thirds of the external and internal sphincter had been removed, and there necessarily occurred cicatrical deposits at the site of this deep cauterization. After the ligature operation was said to

have been performed I have seen two strictures; and, after the so-called American method of Whitehead, I have seen five or more. Following resection of the rectum for carcinoma I have had five strictures of more or less caliber, in two of which there has been recurrence at the site of stricture; the others have been of a mild dilatable character and practically disappeared. In amputation there is always more or less cicatricial contraction at the juncture of the gut and skin at the margin of the anus; these do not always entirely disappear, and, although they sometimes cause a certain amount of inconvenience, the result, considering the gravity of the condition, has usually been considered quite satisfactory.

In the four cases in which I have seen pelvic abscesses open into the rectum, two have developed marked strictures above the site of the opening, and the other two to my great surprise, although they presented marked symptoms of stricture at the time of examination, have healed without any contraction of the rectal caliber. This brings up the point of temporary constriction of the rectum, due to large abscesses in the pelvic cavity, or to tumors of the broad ligament. As Mr. Cripps has pointed out, if one will place the finger in the rectum and at the same time pull upon the uterus and broad ligament, he will find a constriction of the rectum, showing a connection of the rectal fascia and fibrous bands with those of the pelvic fascia. When the tumor has been removed, or the abscess opened and the tension relieved, the stricture, if the inflammation has not invaded the rectal wall, will disappear. One cannot ignore this condition in examining for stricture. A number of cases reported in Mr. Cripps' work as stricture of the rectum have proved, on post-mortem examination, to have been pelvic or pelvirectal abscesses, which, had they been recognized and opened early in their history, would probably have never been fatal.

Simple proctitis or rectitis as a cause of stricture is difficult to discuss, for in this day of specific germs for every ulceration one hardly knows what to describe as simple. If, however, we assume that those destructive ulcers not associated with syphilis, tuberculosis or dysentery may be placed under this head, one may say that this is the most frequent cause of stricture because it is a part of every traumatic or post-operative stricture. The process by which it leads to stricture is described above, viz., infection, destructive ulceration, round-celled infiltration, fibrous deposit, muscular atrophy and persistent contraction.

### DYSENTERY.

There has been a long series of discussions with regard to the production of stricture by dysentery, but I shall not enter upon a pathological dissertation here. Those of us who have seen much amebic dysentery and the results thereof have seen strictures following this disease, although we have never been able to demonstrate the ameba in the stricture itself. The fact is that an amebic ulcer may become infected with colon bacilli, streptococcus, tubercle bacilli, etc., and these infections may produce a deeper destruction of the tissue than ordinary ameba, and then the stricture, while not dysenteric itself, will have had its origin in this disease.

### SYPHILIS.

Time would prevent my entering into an academic discussion concerning the influence of syphilis in the production of rectal stricture; besides, there is little new to be said on this subject. Outside of the presence of gummata, and certain changes in the blood vessel walls, there is practically no difference in the pathology of syphilitic stricture and those due to any other inflammatory cause; the process is identically the same, the destructive ulceration extending down into the muscular walls of the gut, the extension of the inflammatory process along the line of intermuscular fibrous bands, a crowding out of the muscles by hypertrophy and increased deposits of fibrous material, and the subsequent persistent contraction of these deposits, reducing the caliber of the gut and interfering with the return circulation in the veins: these compose the practical pathology of stricture, whether it be syphilitic, tubercular, or simply inflammatory.

To this interference with circulation I wish to call special attention! *It has been known for many years that the ulcerative process in this condition was chiefly below the stricture and not above, as has been stated by so many theorists, and said to be due to the friction caused by the passage of hard fecal matter. There is sometimes an erosion and irritation above the stricture, but this can be easily handled by dilatation and by keeping the fecal masses soft. Not so, however, with the ulceration below. All forms of treatment, whether local or constitutional, fail in the treatment of ulcers below the stricture except radical surgical procedure. The explanation of this lies in the fact that the contractile fibrous stricture limits the normal blood supply and obstructs the return flow through the superior hemorrhoidal veins to such an extent that there is an abnormal circulation in the part, — a deficient quantity of new blood and a stasis of what does go into the parts in the hemorrhoidal veins, thus preventing spontaneous healing or a normal response to local and constitutional measures.*

This explains why in syphilitic strictures constitutional remedies have practically no effect on the healing of these ulcers; it is not the obstinate syphilitic nature of the ulcer; the condition is the same whether the patient be syphilitic or not; the ulcers do not heal in either case until the obstruction to circulation be removed. It will thus be seen that practically syphilitic strictures differ very little from other strictures. It seems to me that stricture in the rectum of syphilitics varies from that in non-syphilitics just as ulceration in any other part of the body differs in syphilitics and non-syphilitics. In other words, the changes in the blood vessel walls, the increased round-celled infiltration, interfering more or less with the circulation in the parts, prevent response to ordinary medication. Constitutional medications may affect these con-

ditions, but they in no wise affect the fibrous tissue in the syphilitic any more than in the non-syphilitic. This condition once formed is not amenable to constitutional treatment.

### GONORRHEA.

Gonorrhea and chancroid have been enlarged upon by some authors as frequent causes of stricture of the rectum. As to the former, notwithstanding we have seen many more cases of this disease in our clinic during the last few years than formerly, we have not seen a single stricture of large or small caliber that we can attribute to it. Theoretically, if an ulceration from it should involve the muscular coat, there is no more reason why a stricture should not follow than from any other ulceration. As to chancre, these cases apparently do not come to my clinic, nor do I believe that they exist as frequently as in former years; at any rate, I have not seen those that extend high up into the rectum, or that were sufficiently destructive to cause a stricture of this organ.

### TUBERCULOSIS.

During the last few years tuberculosis has come to be recognized as a greater factor in rectal stricture than was formerly supposed. Many of the conditions that were once attributed to syphilis are now known to be tubercular. Modern methods of examination of the rectum have enabled us to recognize and diagnose as tubercular ulcerations that were formerly supposed to be syphilitic. It is true that the ulcerative process is not usually so deeply destructive in this disease as in syphilis, and consequently there is not such a large proportion of them that result in stricture because the muscular wall is not so frequently involved. I have published elsewhere my observations, both clinical and post mortem, on the frequency of tubercular strictures, or, as may be better stated, stricture following tubercular ulcerations. The stricture itself differs in no wise from those caused by other inflammatory conditions, except in certain cases we find miliary tubercular deposits on the surface, and sometimes following the minute blood vessels. There is another form in which it occurs, however, and that is in perirectal strictures, which I have mentioned above. This has been well described by Quénu and Reynier, and is, I believe, more frequent than even they have supposed. Personally I think I have seen it several times, but have failed to recognize it when seen. I remember two cases in the almshouse in which tubercular stricture existed without any ulceration in the mucous membrane and without the leathery feeling of ordinary fibrous strictures. There was a bosselated feeling to the rectum, with more or less congestion of the blood vessels, and a marked narrowing of the caliber. To the touch the condition resembled very much the early development of sarcoma, but the process failing to develop rapidly as in this disease, that diagnosis was abandoned. Under forced feeding, rest and mercurics the condition seemed to improve somewhat, but never disappeared entirely. This might lead one to believe that syphilis was present, but as we all know, and as has been recently brought to our view by the United States Army Medical Reports, this medicine has an influence upon certain tubercular processes, and as one of my patients died from pulmonary tuberculosis, I am confident that the condition in both of them was due to this process as there was never any evidence of syphilis elsewhere.

Recently I have had under my care a young woman in the Polyclinic Hospital in whom a stricture at the recto-sigmoidal juncture was found. My associates at first believed the same to be malignant; careful examination, however, revealed around the narrowed opening a verrucous tuberculosis. The abdomen was opened and the stricture was found to be due to an inflammatory deposit outside of the rectal wall and beneath the peritoneum; this deposit was dissected off and a No. 9 Wales bougie passed easily through the strictured area. Unfortunately for this poor girl, the tubercular process was found to extend throughout the colon and the cecum, and appendix was practically obliterated by tubercular deposits. Her physicial condition was not such as to justify the removal of the entire colon at that time, therefore I resorted to an ileo-rectostomy, hoping that by functional rest to her colon her health might improve to such an extent that we could remove the gut later. At that time she had a pulmonary tuberculosis which was quiescent; she improved for a while and her stools were reduced from twenty-five to three or four a day. Unfortunately, the long confinement in the hospital has caused the pulmonary condition to light up again and she is gradually failing on this account, while her intestinal condition is improved as much as one could expect. Here we have two types of stricture, one perirectal and one intra-intestinal, beyond all question tubercular. Much might be said of the pathology of strictures, but let us sum it up by saying that a large majority of strictures of the rectum are traumatic or simple inflammatory; that while syphilis does produce a certain number, they are much fewer than was formerly supposed; and, finally, that tuberculosis plays a much larger rôle in ulcerations and stricture of the rectum than was formerly supposed; and all of these factors must be taken into careful consideration when one comes to treat stricture of the rectum.

### PHYSICAL CHARACTERISTICS OF STRICTURE.

A second classification of stricture is based upon the physical characteristics; after this manner we may divide them into valvular, annular and tubular; and upon these types will depend almost absolutely the method of surgical procedure to be employed in their treatment.

### VALVULAR STRICTURE.

The membranous or valvular types are usually congenital and appear at the juncture of the rectum with the anal canal, or at the sites of

Houston's folds. They are chiefly composed of folds of mucous membrane, with a few fibrous and muscular bands; in early life they are soft and easily dilated, and, if properly treated in childhood, they disappear; if left, however, the irritation of straining and retained fecal matter cause infection and hypertrophy in the fibrous structure and subsequently a true fibrous constriction of the parts.

The true membranous or umbrella-like strictures occur at the junction of the rectum with the proctodaeum and are due to the imperfect absorption of the layers of epiblast and hypoblast. Incomplete dilatation of simple imperforated ani are frequently its cause.

As to the valvular type, this condition is not recognized as a true stricture; they are normal structures, but they may be deformed and obstructive, thus causing irritation and inflammation and fibrous deposits which shorten the free edges of the mucous folds, forming pockets similar to the cups in a grain elevator; such pockets catch and retain fecal material, often causing autotoxemia, rectal discomfort and even ulceration which may produce true fibrous stricture. It is this type of rectal deformity upon which Martin has based his theory of valvular obstruction and its influence in the production of constipation. The condition is not nearly so frequent as it was formerly believed to be, but it does exist and its proper treatment gives most gratifying results.

### ANNULAR STRICTURE.

This type of stricture is usually due to traumatism, simple ulceration, tuberculosis or dysentery; it begins abruptly and usually surrounds the entire rectum; it is movable when the patient is squatting or in a semi-prone position; there is a sulcus around it into which a probe or bougie is much more liable to pass than into the caliber of the stricture; there is always mucous discharge, ulceration and secretions which are less than in tubular strictures. It is this type of stricture that follows acute or tubercular ulceration of the rectum chiefly.

### TUBULAR STRICTURE.

This type of stricture follows chronic inflammatory conditions, whether simple, tubercular or syphilitic; it involves from three fourths of an inch to six or more inches; it begins gradually in a cone-like contraction; it has no sulcus around its aperture, it is immovable and accompanied by much discharge — dark and feculent in syphilitics; and creamy white and purulent in tuberculars. Its chief symptoms are diarrhea, or rather frequent calls to stool, with a discharge of mucus, pus and blood; there is difficulty in obtaining a satisfactory stool, especially if the fecal matter is hard; incontinence and constant discharges if the stricture is low; aching pain around the pelvis; loss of flesh; reflex digestive disturbances; and shooting pains in the pelvis and urinary organs.

Upon these physical characteristics will depend largely the method of surgical treatment regardless of its pathological nature.

### DIAGNOSIS.

Diagnosis of the existence of stricture within the limits which we have set — the lower six inches of the intestinal tract — is a simple matter. It can either be felt with the finger or seen through a pneumatic proctoscope; its extent, dimensions, caliber and the complications surrounding it are rather more difficult. The subjective symptoms, such as constipation, diarrhea, incontinence, discharges, reflexes, etc., are familiar to you all. Digital examination is the chief factor and practically without danger if one is only careful not to use great force. The fatty degeneration and friable condition of the rectal walls render this liable to rupture, and that rupture will always be in the line of least resistence — toward the peritoneal cavity. So far as rectal bougies are concerned, I have long since ceased to look upon them as instruments for diagnosis; they are so liable to lodge in the sulci beneath the stricture or be grasped by the sphincter muscle so that, if by chance they enter the aperture of the stricture, one cannot tell whether they are held by the stricture or by the muscle. So many instances of perforation or rupture of the gut have followed their use that I consider them too dangerous to be employed in this condition by even the most expert.

Whenever the stricture is above the reach of the finger, its existence may be found by a proctoscope introduced up to the constriction, and one may see clearly the aperture and the diseased area. In order to determine the caliber and extent of the stricture, one may employ an olive bougie, exercising the least possible force, or a probe fashioned after the manner of Martin, with which one can tell by palpation when he has passed beyond the diseased area and comes upon smooth mucous membrane. It is true that this requires a high degree of sensitive education, but it is the most practical way to determine the extent of the disease without any danger to the patient. This difficult diagnosis is not often necessary, as a large majority of strictures are within reach of the finger and can be easily made out.

The methods of examination; characteristics distinguishing tubercular, syphilitic and simple ulcerative processes associated with stricture; differentiation between malignant and non-malignant obstructions of the bowel have all been fully described in my work on "Diseases of the Anus, Rectum, and Pelvic Colon" and need not be repeated here.

### TREATMENT.

It will be seen from the foregoing that treatment of stricture does not merely consist of widening or removing the stricture; it also involves the treatment of etiological factors as well. It were better to leave the condition alone than to attempt to dilate forcibly or extirpate in the face of a

large quantity of pus and infection. There are two radical cures for stricture: First, preventive; second, amputation, but we cannot always apply these methods. The average case comes into the hands of the specialist usually after true fibrous stricture has been established, and thus prevention is impossible. If the general practitioner would attach more importance to local examination and add more emphasis to the necessity of this in dealing with patients where there are symptoms indicating disorders of the rectum, I am confident that stricture would be reduced more than 75% of its present frequency.

Most ulcerations of the rectum, if diagnosed early, could be checked in the destructive process and healed before they involve the muscular walls of the intestine. I cannot go into the details of such treatment, but if I can impress upon you the necessity of local examination in all cases of diarrhea and constipation, in cases of tuberculosis or syphilis, whether they present rectal symptoms or not, my mission here will have been accomplished. I attribute the infrequency of post-operative strictures at my clinic to the fact that we are in the habit of using a large-sized Lynch tube after most operations for hemorrhoids, stricture and amputations, and we invariably begin to dilate with our fingers on the fifth day after operation, thus stretching the new fibrous deposit, increasing the flow of blood to the parts, inducing absorption of plastic material and at the same time stimulating muscular contraction in the circular fibers, causing them to resist the encroachment of fibrous deposits and keeping them alive, as it were, to their function of contraction and relaxation.

Most of the strictures which we have following resection have come in cases that have lived away from New York, and in whom the dilatation has been trusted in other hands. I do not mean by this to offer any criticism on my good friends who have done the best they know, nor do I say these would not have occurred had I treated them myself, for I believe there is such a tendency to this result that I have practically discontinued the operation in the rectum itself. But I do believe that most all post-operative strictures could be prevented by proper after-treatment.

### DILATATION.

Gradual dilatation is a part in the method of treatment for all strictures. In the early stages, when the fibrous material is soft and elastic, I have no doubt that by this method many strictures can be dissipated; the idea, however, that it can be done by a bougie is based upon a false conception of the parts. A normal anal canal measures about 3 cm. in circumference; above this the rectum dilates very rapidly, and in its normal condition measures 5–15 cm.; therefore, it would be impossible to introduce through the anal canal any instrument that would at all fill up the rectal ampulla. How, then, can one expect to dilate strictures of the rectum, except those with very narrow calibers, by an instrument that can be introduced through the anus. In the early stages of stricture, when they are of large caliber, a bougie is useless to dilate. One would naturally turn to a Barnes bag, or a Robert's dilator, which, being introduced into the caliber of the stricture, may be blown up and stretch the constriction. Theoretically this is ideal, but having had the experience of rupturing one intestine and almost killing my patient with one of these instruments, and having heard of two others, I have not the temerity to use or the boldness to recommend them.

The friable condition of the gut wall at a point below and above the stricture, and the impossibility of knowing how much force is being exercised by pneumatic or hydraulic pressure, renders these procedures very dangerous. Where the stricture is within the reach of the finger a long Humphrie's speculum or flat retractor may be introduced through it and the finger used to dilate and massage the stricture with good effect and is far safer than any concealed instrument or bougie of whatever type. If the stricture is above the reach of the finger and is of wide caliber one may introduce a proctoscope and through it dilate and massage by long forceps or probes, or, he may without great danger introduce a Wales bougie with the flanges removed and which does not fit too tight; this being left in the stricture will gradually dilate it so as to decrease the discomfort of the patient, but such a process will never cure a well-developed stricture.

Rapid dilatation or divulsion in stricture of the rectum is absolutely unjustified. Rupture will always take place in the line of the least resistance and this line is almost always toward the peritoneal cavity.

### PROCTOTOMY.

The operation of proctotomy consists in incising the rectum; in stricture it may be partial or internal and complete. Partial proctotomy has been condemned by most rectal surgeons on the ground of danger from hemorrhage and infection; in my own experience, however, I have obtained some very good results from this operation, especially in annular stricture. I do not employ the knife, however, in making the incision; I use an electric cautery blade and always employ it through the proctoscope. The incision is made posteriorly and always a little to the left of the median line in order to avoid the usual site of the superior hemorrhoidal artery. This burned incision closes up all lymphatics and blood vessels, thus avoiding absorption, infection and hemorrhage. The operation is not employed in strictures less than two and a half inches from the anus, for I consider complete proctotomy or amputation better adapted to those within range.

### COMPLETE PROCTOTOMY.

This operation consists in incising the rectal wall through the stricture from a point about one half an inch above the latter out to the tip of the coccyx, involving both sphincters and extending back to the bone throughout its length. While I have yet to see a case of true fibrous stricture

cured by this operation, I still believe it is one of the most beneficent in rectal surgery; it relieves the obstruction, loosens up the contractions, thus removing to a certain extent the interference with circulation below the stricture; it gives full drainage and is in itself practically without any great danger. Sometimes it is followed by infection and abscesses in the cellular spaces and requires prolonged after-treatment and practically a bondage to the bougie for the rest of life. At the same time, it can be done by any one and when radically performed at the psychological moment has saved many lives. Theoretically one would say that the bowels should be emptied and suppuration controlled before such an operation; practically this is impossible, as it must be done at times upon the spur of the moment and one marvels at the few fatalities which follow such an operation under such conditions. In long tubular strictures, the upper end of which cannot be determined, and where there is no great emergency, the operation should not be performed, but should be substituted by colostomy, which is our sheet anchor in the preparation of such patients for the radical cure or for a life of comparative comfort with the stricture left unattacked.

After complete proctotomy has been performed, complete dilatation is necessary until the ulceration is entirely healed; this is ordinarily accomplished by the use of a large bougie or digital dilation. The danger of the bougie consists in the fact that if the anal canal is kept widely enough dilated in order to introduce an instrument large enough to stretch the rectal canal, the former may become so enlarged as to cause incontinence. It seems, therefore, that some instrument, such as Barnes' bag, Hirschmann's or Roberts' pneumatic dilator would be applicable in cases like this. I am of the opinion that, having cut the fibrous and restraining tissues of the stricture thoroughly, these instruments would not be so dangerous as I have described above, for the line of least resistance would then be in the line of incision, and rupture into the peritoneal cavity would not be so imminent; one should be very careful in their use and in the amount of force exerted.

### EXTIRPATION.

Since my last public utterance upon this subject in 1903 (Diseases of the Anus, Rectum and Pelvic Colon), in which I advised in a conservative way the local resection of the strictured area and an end-to-end union, my experience with this method has been considerable. Up to 1909 I had not lost a case either by the sacral, perineal or combined methods of operation in non-malignant strictures. Since then I have lost two — one through shock following a combined operation, and the other following a perineal operation six months later, which I shall describe further on. These two cases make my mortality about 6%. The results of resection, however, have been altogether unsatisfactory; with the exception of four cases there has been more or less recurrence, usually more, and in every case at the site of the end-to-end union. This experience and the fact that a large number of strictures are limited to the lower four inches of the intestinal tract have led me to adopt the method of complete extirpation or amputation in all cases in which this operation is feasible. Every year adds to my confidence in the perineal method; as one becomes more and more familiar in its use, its possibilities and the amount of gut that can be brought down and sutured to the anus without abdominal section is demonstrated. In two cases recently I have taken out 12½ and 11½ inches of the bowel by measurement and have been able to bring the gut down and suture it to the margin of the anus without any tension whatever. Although we have not had perfect primary union, the results have been satisfactory in that the patients have recovered with very little incontinence and none of them have been confined to the hospital longer than four weeks.

The technic of this operation is described in my work already referred to and need not be repeated here. The operation is limited, however, to finding the gut in a proper condition for such a procedure; where there is an extensive ulceration invading the perirectal tissues, or accompanied by complications such as rectovaginal, rectourethral or perineal fistula, one is hardly justified in attempting such radical operative interference, as infection will probably take place, and if it involves the peritoneum, a fatal issue is most likely to occur. Under such circumstances one should delay the radical operation until these conditions can be cleared up. There is also another condition which renders this operation dangerous, and that should be carefully considered before one undertakes it; this is a fatty degeneration of the gut wall, found in old syphilitic cases, and sometimes extending throughout the area of the sigmoid, if not the colon itself. It is always necessary in this operation to exert a certain amount of force in traction upon the gut during the procedure, and where this degeneration of the walls is present, the intestine is liable to be torn across and infection of the parts occur.

This was the eventual cause of death in one of the cases mentioned above. This patient had an old syphilitic stricture of the rectum, with extensive ulcerations below and a rectovaginal fistula. It was not deemed wise in her case to attempt radical operation at once on account of these conditions. A temporary colostomy was made in the transverse colon in order to turn the fecal current aside and give the ulcerations below an opportunity to heal. This being done, everything proceeded encouragingly, the ulceration disappeared, the stricture itself softened and everything seemed favorable for amputation of the strictured area. At the time of the first operation thickening of the walls of the sigmoid and enlargement of the appendices epiploicæ were observed. The woman had undergone forced specific treatment, and we believed that this condition would have improved as well as that in the lower end of the gut, and we undertook the amputation with great confidence. Having dis-

sected out the cicatrical tissue and loosened the gut up to Douglas's cul-de-sac, we proceeded to bring it down. To the touch it did not seem to be much thickened or inflamed; while I was loosening the mesosigmoid, one of my associates was making traction upon the gut; how hard he was dragging I cannot say, but as I snipped the last fold of the peritoneal band holding the gut, it came down with a jerk and was torn across at about a level of the sacral promontory, some five inches above the stricture and far above the point at which I had hoped to attach it to the margin of the anus. It was now impossible to think of bringing this torn end down; therefore, I grasped it with my hands and clasped it across with a strong clamp; I then packed the parts off with gauze, leaving a drainage at its end, and as the woman was in a state of shock, discontinued further operation, thinking that I would have a perineal fistula and would have to leave the woman with her artificial anus permanent. In four weeks she left the hospital in good condition, although greatly disappointed. Shortly afterwards she developed an acute pneumonia for which she was brought back to the hospital and recovered. After this there developed a large abscess in her abdomen which was opened and which was clearly shown to be connected with the lower end of the sigmoid which had been torn off; this was determined by the fact that irrigation through the distal opening of the artificial anus flowed out through the abscess cavity, notwithstanding the fact that the spur of the artificial anus worked and there was no escape of fecal matter in this direction. She shortly afterwards began to pass liquid feces through the abscess cavity and rapidly failed. Autopsy showed a rupture into the abscess cavity from the ileum about eight inches above the cecum. Such an accident will, of course, be rare, but it is worth while to keep this condition in mind, and in these old syphilitic cases either be content with a good artificial anus, or to wait a long time before attempting a radical operation.

Time would prevent my describing the operation of Bacon, the recto-colostomy of Kelly and other methods of operation for stricture of the rectum which are applicable only in very limited and high strictures; we cannot close, however, without considering one of the most beneficent means of treating this condition, viz., colostomy.

This operation is to be looked upon in three lights: *palliative*, *preliminary* to radical operation, and *curative*. Where the stricture is long and tubular and accompanied by ulceration and discharge or complicated by fistula and large abscess cavities, colostomy is undoubtedly one of the most beneficent operations in the whole field of surgery. It affords ample egress for the fecal matter, it protects the diseased area from acrid discharges, it relieves most of the reflex digestive disturbances, enables the patient to be built up by proper feeding and provides the best possible condition for the treatment of ulcers and strictures locally. Where the patient is unwilling to submit to this as a permanent condition, the operation may be held out as preparatory to radical extirpation, and it certainly is most useful in this procedure.

As a curative method, I am not able to point out many cases in which it has been successful; there is no question, however, that in almost every instance in which it has been done there has been a radical recession in the ulcerative process, and in many cases the stricture has been found to soften and become more easily dilated, and in some cases seemed to disappear entirely. In one case, which I have reported elsewhere, this process seemed so perfect that I closed the artificial anus believing that the patient was well; after about a year she returned to the hospital and I found that the stricture had recurred and was as tightly contracted as ever so that the artificial anus had to be restored, and, so far as I know, the patient carried it through life.

In one instance in which the stricture extended from two inches above the anus well up into the sigmoid, the woman had been brought into the hospital for carcinoma with obstruction of the bowel. A rapid colostomy was made and her symptoms relieved. In this case there was never any absorption of the stricture, the fibrous process and its tendency to contract continued through life, and the last time that I saw her it was with difficulty that I was able to pass a No. 10 French urethral bougie through the rectum and into the lower end of the artificial anus. This minute opening was kept up for ten years in order to prevent an accumulation of the intestinal secretions above, but the patient learned to manage the anus so perfectly that she was never willing to have the radical operation done, nor was I willing to advise it. She lived fifteen years after the operation and was the most grateful patient I have ever had; she died of a broken neck, having fallen down stairs one morning when going to her kitchen.

The important question with regard to colostomy in these cases is whether the aperture is to be permanent or temporary. In long tubular strictures, and those with severe complications, as have been mentioned above, I believe it is desirable to convert these patients to an acceptance of a permanent artificial anus; the dangers of operation and the uncertainty of continence after it renders it probable that they will be quite as comfortable with the opening in the side as after a radical extirpation. If, then, one believes that radical extirpation is going to be improbable, it would be better to make for them at once a modified Bailey colostomy, and thus end the matter. If, however, there are reasons to believe that one can extirpate the stricture and restore the fecal exit to its normal site, then I believe we should make the colostomy in the transverse colon, above the umbilicus, for the following reasons: First, There is never any danger but that the mesocolon will allow a perfect spur and hence no leakage into the gut below. Second, There is less liability to prolapse because the force of gravitation will drag the gut down instead

of forcing it out through the aperture. Third, and chiefly, because it does not interfere with the dragging down of the sigmoid to any extent that may be necessary in the radical operation to be done.

## HEMORRHAGIC DISEASE OF THE NEWBORN.*

BY ROBERT M. GREEN, M.D., BOSTON, AND JOHN B. SWIFT, JR., M.D., BOSTON.

(From the Clinic of the Boston Lying-In Hospital.)

The subject of hemorrhagic disease in the newborn is one of peculiar interest, not only because its etiology is still uncertain, but because it is one of the serious emergencies of early infantile life, in the treatment of which important progress has been made in recent years. The disease was first described as a clinical entity in 1852 by Dr. Francis Minot,[1] of Boston. In 1891, Dr. Charles W. Townsend,[2] of Boston, published a valuable paper reviewing the literature of the subject since Minot's time and reporting a series of 32 cases from the clinic of the Boston Lying-In Hospital, together with 577 cases collected from other writers. From an analysis of these cases he reached the conclusions that the disease is probably due to an acute infection, that its mortality in all forms is about 75% and that its treatment is best directed towards mechanical control of the hemorrhage and maintenance of the strength of the patient.† Taking Dr. Townsend's original paper as a point of departure, it is our desire to report a further series of 51 cases from the clinic of the Boston Lying-In Hospital, and to discuss briefly the bearing of their statistics on the etiology and on the various methods of treatment of this disease which have been advanced during the past twenty years. For the privilege of consulting the records of the hospital and of observing some of the cases in the wards, we wish gratefully to acknowledge our indebtedness to the courtesy of the visiting physician and other members of the Boston Lying-In Hospital staff.

The 51 cases which form the basis of this paper occurred in the wards of the hospital from June 19, 1904, to April 1, 1910, a period of nearly six years. The total number of babies born in the hospital during this time was 4,455, showing a percentage incidence of 1.14% as against 0.57% in Dr. Townsend's series. We have presented these cases in tabular form, noting particularly the parity and the civil condition of the mother, the duration of labor, the fetal position and the complications of labor and puerperium, the date of delivery, the age of baby at onset of disease, the treatment and the result. We will next proceed to an analysis of these cases to determine the bearing, if any, of each of these factors on the problems of the disease.

Of the 51 mothers, 31 were primiparæ, 20 were multiparæ. It has been thought that firstborn children are more subject to the disease than those of subsequent pregnancies, chiefly because of the longer average period of labor to which they are subjected. The present figures would seem to bear out this assertion, but in reality we believe they do not, since this proportion is approximately the same as that of primiparæ to multiparæ in the entire clinic. In none of the multiparæ of this series is there any record of hemorrhage in previous children. This fact would tend to controvert the theory that the disease is analogous to hemophilia, or in any way dependent on a hereditary dyscrasia.

Thirteen of the 51 mothers were single, 38 were married. This again would seem to bear out the supposition that illegitimate children are more subject to the disease; but again this is approximately the proportion of illegitimacy in the entire clinic.

The presentation of the fetus in every case was a vertex, but any series of 51 cases taken at random might well fail to include any other variety.

As stated above, it has been held that length of labor is an important predisposing factor in the production of the disease, from the exhaustion to which it subjects the fetus. The present statistics, however, would not seem to bear out this supposition. The longest labor of the series, it is true, ran to seventy hours, but this baby recovered, and of the 25 who died, 10 were born after less than twelve hours of labor. The average duration of labor for the entire series is fourteen hours thirty-seven minutes, which is only slightly above the general average for a large number of unselected cases.

Nine of the labors were forceps deliveries, again about the same percentage as of all cases in the clinic. One of the mothers had pneumonia at the time of delivery, one had mitral regurgitation, and one impending eclampsia. One mother was an epileptic. Three of the puerperia were complicated by slight uterine sepsis, two by mastitis, one by salpingitis, and one by scarlet fever. It does not seem that any of these complications or attendant circumstances could have had any bearing on the hemorrhagic condition.

The seasonal distribution of the cases seems, on the other hand, distinctly significant. Of the 51 cases, 39 occurred during the six months from November to April inclusive, and only 12 during the six months from May to October inclusive. This proportion, which is essentially the same as that of the seasonal incidence of such infections as impetigo, diphtheria and bronchopneumonia, should confirm the theory of the infectious etiology of the disease, which is more prevalent during the months when ventilation is poorest and general resistance to infection is lowered.

Again it is instructive to observe that 33 of the cases occurred in distinct groups, after the manner of hospital infections. These groups are indicated in the table by brackets, including such cases as occurred closely enough together to admit of being due to a common infection. Of these groups, the most remarkable, and the only one amounting to a distinct epidemic, is the next to the last, of 13 cases, when from Dec. 20 to the following

* Read before the Surgical Fortnightly Club, Boston, Feb. 21, 1911.
† In a subsequent paper[3] Dr. Townsend reported 18 additional cases; but we have confined ourselves to the first series for comparison.

## Table of Cases.

| No. | Hospital record. | Mother. Parity. | Mother. Status. | Labor. Position. | Labor. Duration. H. | Labor. Duration. M. | Complications of labor or puerperium. | Date of delivery. | Age at onset. Days. | Location of hemorrhage. | Treatment. | Result. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 118–78 | 1 | M. | O.L.A. | 12 | 50 | | June 19, 1904. | 2 | Tarry stool. Purpura right leg. | | |
| 2 | 119–192 | 1 | M. | O.D.A. | 6 | 25 | | Sept. 21, 1904. | 4 | Two rectal hemorrhages. | Brandy. Modified milk. | Well. |
| 3 | 119–194 | 9 | M. | O.L.A. | 11 | 50 | | Sept. 22, 1904. | 3 | Hemorrhage from mouth and rectum. | Brandy. Gelatine 2% ev. ½ hr. p.o. Salt solution with gelatine p. r. ev. 6 hr. | Well. |
| 4 | 120–118 | 1 | S. | O.L.A. | 6 | 20 | | Nov. 6, 1904. | 2 | Hemorrhage from mouth. Tarry stool. | Gelatine and brandy. | Well. |
| 5 | 121–134 | 2 | M. | O.D.A. | 15 | 5 | | Jan. 14, 1905. | 2 | Many hemorrhages, mouth, rectum. | Brandy and gelatine. | Well. |
| 6 | 122–202 | 2 | M. | O.L.P. | 7 | 30 | | April 8, 1905. | 1 | Purpura. Cord. Rectum. | Gelatine. Modified milk. | Dead. |
| 7 | 123–164 | 8 | M. | O.L.A. | 18 | 15 | Seven months' pregnancy. Pneumonia (maternal) (fatal). | June 1, 1905. | 2 | Eyes. Nose. Mouth | Cord religated, cauterized, and pursestring suture. Col. chl., gr. v. | Dead. |
| 8 | 125–64 | 4 | M. | O.L.A. | 4 | 55 | | Sept. 18, 1905. | 3 | Purpura. Hemorrhage from stomach and rectum. | Nose. | Dead. |
| 9 | 126–8 | 6 | M. | O.L.A. | 20 | 30 | | Nov. 3, 1905. | 4 | Purpura. Slight nosebleed. | Gelatine capsules. | Well. |
| 10 | 126–32 | 5 | M. | O.L.A. | 12 | 10 | High forceps. | Nov. 8, 1905. | 1 | Face. Stools. | None. | Well. |
| 11 | 126–56 | 2 | M. | O.L.A. | 26 | 40 | Salpingitis. | Nov. 16, 1905. | 3 | Stools. | Gelatine. $CaCl_2$ | Well. |
| 12 | 126–96 | 1 | M. | O.D.P. | 14 | 20 | Epilepsy. | Nov. 28, 1905. | 2 | Hematoma. Stomach. | Gelatine. $CaCl_2$. Brandy. | Well. |
| 13 | 127–238 | 2 | M. | O.L.A. | 2 | 25 | | March 3, 1906. | 2 | Cord. Stomach. Hematuria. | Gelatine. | Well. |
| 14 | 128–226 | 1 | S. | O.L.A. | 33 | 40 | | April 22, 1906. | 1 | Bloody stools. | Cautery. $AgNO_3$. | Well. |
| 15 | 129–54 | 5 | M. | O.L.A. | 8 | 40 | | May 11, 1906. | 4 | Purpura. | Brandy. | Well. |
| 16 | 132–58 | 4 | M. | O.L.A. | 5 | 15 | | Oct. 31, 1906. | 4 | Stomach and rectum. | Suppurative. Gelatine. | Well. |
| 17 | 133–222 | 1 | S. | O.D.P. | 1 | 20 | Slight sepsis. | Feb. 5, 1907. | 6 | Nose. | Stimulation. | Well. |
| 18 | 133–232 | 1 | M. | O.L.A. | 11 | 45 | | Feb. 5, 1907. | 12 | Purpura. Cord. | $AgNO_3$. Adrenalin. | Well. |
| 19 | 134–116 | 1 | M. | O.L.A. | 5 | 5 | | March 6, 1907. | 1 | Nose. Stomach. Rectum. | Adrenalin. Tr. $FeCl_3$. Calc. lac. | Well. |
| 20 | 139–56 | 1 | S. | O.L.A. | 16 | 35 | Mitral regurgitation. | Dec. 8, 1907. | 9 | Cord. Purpura. | Adrenalin. Pressure. Sutures. | Well. |
| 21 | 140–96 | 1 | S. | O.L.A. | 8 | 35 | Low forceps. | Feb. 2, 1908. | 4 | Cord. | Suturing. Pressure. | Well. |
| 22 | 141–12 | 4 | M. | O.L.A. | 8 | 40 | | March 8, 1908. | 1 | Stomach. Rectum. Purpura. | 40 ccm. rabbit serum, 6 min. | Well. |
| 23 | 141–166 | 4 | M. | O.L.A. | 3 | 45 | Scarlet fever (maternal). | April 7, 1908. | 2 | Rectum. Cord. | Gelatine. Brandy. Paregoric. | Well. |
| 24 | 142–36 | 1 | M. | O.L.A. | 30 | 25 | | April 27, 1908. | 5 | Cord. Purpura. | Gelatine. Brandy. Paregoric. | Well. |
| 25 | 142–60 | 1 | M. | O.L.A. | 10 | 40 | Slight sepsis. | May 1, 1908. | 2 | Mouth. Hematoma. | Gelatine. Brandy. Paregoric. | Well. |
| 26 | 142–104 | 1 | M. | O.L.A. | 10 | 55 | Impending eclampsia. | May 8, 1908. | 2 | Internal hemorrhage (?). Purpura. | Stimulation. | Well. |
| 27 | 142–156 | 2 | M. | O.L.A. | 14 | 45 | Intermediate forceps. Mastitis. | May 19, 1908. | 4 | Purpura. Rectum. | Paregoric. Brandy. Gelatine. | Well. |
| 28 | 146–206 | 1 | S. | O.D.P. | 8 | 35 | | Dec. 2, 1908. | 1 | Stomach and rectum. | Modified milk. | Well. |
| 29 | 148–64 | 1 | M. | O.L.A. | 4 | 30 | | Feb. 11, 1909. | 5 | Cord. Purpura. | Pursestring sutures. Rabbit serum, 60 ccm. Antistreptococcic serum. | Dead. |
| 30 | 148–110 | 1 | M. | O.L.A. | 14 | 0 | | Feb. 21, 1909. | 3 | Cord. | Rabbit serum. | Dead. |
| 31 | 148–132 | 1 | S. | O.L.A. | 13 | 40 | Low forceps. | Feb. 24, 1909. | 2 | Cord. | Pressure. Adrenalin. Serum. | Well. |
| 32 | 149–192 | 1 | M. | O.L.A. | 39 | 58 | Intermediate forceps. | April 21, 1909. | 6 | Cord. | Religation. Adrenalin. Paregoric. Brandy and rabbit serum. Calc. chl., gr. v. | Dead. |
| 33 | 149–206 | 1 | M. | O.L.A. | 70 | 19 | High forceps. | April 24, 1909. | 4 | Cord. | Religation. Paregoric. Brandy. Rabbit serum. | Well. |
| 34 | 149–224 | 1 | S. | O.L.A. | 21 | 50 | Slight sepsis. | April 30, 1909. | 3 | Nose and mouth. | Paregoric. Rabbit serum. | Dead. |
| 35 | 150–102 | 1 | M. | O.D.P. | 9 | 40 | | May 28, 1909. | 2 | Multiple hematomata. | Rabbit serum. | Dead. |
| 36 | 152–168 | 1 | S. | O.L.A. | 13 | 25 | | Sept. 22, 1909. | 3 | Hematuria. | Rabbit serum. Transfusion. | Dead. |
| 37 | 154–92 | 7 | M. | O.D.P. | 6 | 50 | | Dec. 20, 1909. | 3 | Mouth and nose. | Rabbit serum. | Well. |
| 38 | 154–114 | 6 | M. | O.L.A. | 21 | 25 | | Dec. 24, 1909. | 2 | Rectum. | Rabbit serum. | Well. |
| 39 | 154–170 | 2 | M. | O.D.P. | 7 | 15 | | Jan. 8, 1910. | 1 | Rectum. | Rabbit serum. | Well. |
| 40 | 154–224 | 2 | M. | O.D.P. | 2 | 12 | | Jan. 19, 1910. | 3 | Rectum. | Rabbit serum. | Well. |
| 41 | 155–32 | 1 | S. | O.L.A. | 4 | 15 | | Jan. 28, 1910. | 5 | Intracranial. | Incision and drainage. | Dead. |
| 42 | 155–50 | 1 | S. | O.D.P. | 14 | 45 | | Feb. 3, 1910. | 14 | Rectum. | Rabbit serum, 20 ccm. | Well. |
| 43 | 155–56 | 1 | M. | O.L.A. | 29 | 45 | Intermediate forceps. Mastitis. | Feb. 4, 1910. | 4 | Face. Rectum. | Rabbit serum, 60 ccm. | Dead. |
| 44 | 155–76 | 1 | S. | O.D.P. | 10 | 0 | | Feb. 10, 1910. | 7 | Cord. | Rabbit serum, 20 ccm. | Well. |
| 45 | 155–96 | 1 | S. | O.L.A. | 12 | 25 | | Feb. 14, 1910. | 4 | Cord and nose. | Rabbit serum, 20 ccm. | Dead. |
| 46 | 155–100 | 1 | M. | O.L.P. | 40 | 20 | Intermediate forceps. | Feb. 15, 1910. | 2 | Rectum. | Rabbit serum, 20 ccm. | Dead. |
| 47 | 155–184 | 1 | M. | O.L.P. | 31 | 36 | Low forceps. | March 5, 1910. | 2 | Mouth. | Rabbit serum, 60 ccm. | Dead. |
| 48 | 155–188 | 1 | M. | O.L.P. | 8 | 45 | | March 5, 1910. | 3 | Rectum. | Rabbit serum, 60 ccm. | Well. |
| 49 | 155–192 | 3 | M. | O.L.P. | 8 | 25 | | March 7, 1910. | 2 | Mouth. | Rabbit serum, 60 ccm. | Well. |
| 50 | 156–50 | 3 | M. | O.L.A. | 16 | 10 | | March 24, 1910. | 2 | Intracranial. | None. | Dead. |
| 51 | 156–58 | 1 | M. | O.L.A. | 7 | 35 | | April 1, 1910. | 7 | Vagina. | Rabbit serum, 20 ccm. | Well. |
| | | | | | 721 | 1,550 | =746 H. 50 M. | | 178 | | | |

TABLE OF CASES.

| No. | Nationality. | Parity. | Status. | Residence. | Duration of labour. | Complications of labour or puerperium. | Date of delivery. | Age at onset. Days. | Location of hemorrhage. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 118–78 | 1 | M. | O.L.A. | 12 | | June 19, 1904. | 2 | Tarry stool. Purpura right leg. |
| 2 | 118–102 | 1 | M. | O.L.A. | 6 | | Sept. 21, 1904. | 4 | Two rectal hemorrhages. |
| 3 | 119–104 | 2 | M. | O.L.A. | 11 | | Sept. 22, 1904. | 3 | Hemorrhage from mouth and rectum. |
| 4 | 120–118 | 3 | S. | O.L.A. | 6 | | Nov. 8, 1904. | 2 | Hemorrhage from mouth. Tarry stool. |
| 5 | 121–124 | 2 | M. | O.L.A. | 15 | | Jan. 14, 1905. | 2 | Many hemorrhages, mouth, rectum. |
| 6 | 122–202 | 2 | M. | O.L.P. | 7 | | April 8, 1905. | 1 | Purpura. Oral. Rectum. Oral rel |
| 7 | 123–104 | 1 | M. | O.L.A. | 18 | Seven months' pregnancy. Placenta (maternal) (fatal). | June 1, 1905. | 2 | Eyes. Nose. Mouth. |
| 8 | 125–64 | 4 | M. | O.L.A. | 4 | | Sept. 18, 1905. | 3 | Purpura. Hemorrhage from stomach and rectum. |
| 9 | 126–82 | 6 | M. | O.L.A. | 20 | | Nov. 3, 1905. | 4 | Purpura. Slight nosebleed. |
| 10 | 126–92 | 5 | M. | O.L.A. | 12 | High forceps. | Nov. 8, 1905. | 1 | Face. Stools. |
| 11 | 126–96 | 3 | M. | O.L.A. | 10 | Eclampsia. | Nov. 10, 1905. | 3 | Stools. |
| 12 | 126–98 | 1 | M. | O.L.P. | 14 | Epilepsy. | Nov. 28, 1905. | 2 | Hematuria. Stomach. |
| 13 | 127–82 | 3 | M. | O.L.A. | 2 | | March 3, 1906. | 2 | Oral. Stomach. Hematuria. |
| 14 | 128–220 | 2 | S. | O.L.A. | 10 | | April 22, 1906. | 1 | Bloody stools. |
| 15 | 129–94 | 3 | M. | O.L.A. | 8 | | May 11, 1906. | 4 | Purpura. |
| 16 | 130–96 | 4 | M. | O.L.A. | 15 | | Oct. 31, 1906. | 4 | Stomach and rectum. |
| 17 | 133–222 | 1 | M. | O.L.P. | 20 | Slight sepsis. | Feb. 5, 1907. | 6 | Nose. |
| 18 | 133–232 | 1 | M. | O.L.A. | 11 | | Feb. 5, 1907. | 12 | Purpura. Oral. |
| 19 | 134–116 | 1 | M. | O.L.A. | 5 | | March 6, 1907. | 1 | Nose. Stomach. Rectum. |
| 20 | 135–96 | 2 | S. | O.L.A. | 16 | Mitral regurgitation. | Dec. 8, 1907. | 9 | Oral. Purpura. |
| 21 | 140–90 | 3 | M. | O.L.A. | 8 | Low forceps. | Feb. 2, 1908. | 4 | Oral. |
| 22 | 141–120 | 4 | M. | O.L.A. | 8 | | March 8, 1908. | 2 | Stomach. Rectum. Purpura. |
| 23 | 142–96 | 1 | M. | O.L.A. | 30 | Scarlet fever (maternal). | April 7, 1908. | 3 | Rectum. Oral. |
| 24 | 142–96 | 2 | M. | O.L.A. | 25 | | April 27, 1908. | 5 | Oral. Purpura. |
| 25 | 142–100 | 3 | M. | O.L.A. | 10 | Slight sepsis. | May 1, 1908. | 2 | Mouth. Hematoma. |
| 26 | 142–104 | 1 | M. | O.L.A. | 10 | Impending eclampsia. | May 8, 1908. | 2 | Internal hemorrhage. Purpura. |
| 27 | 142–120 | 2 | M. | O.L.A. | 14 | Intermediate forceps. Malaria. | May 10, 1908. | 4 | Purpura. Rectum. |
| 28 | 143–200 | 1 | S. | O.L.P. | 8 | | Dec. 2, 1908. | 1 | Stomach and rectum. |
| 29 | 144–96 | 4 | M. | O.L.A. | 4 | | Feb. 11, 1909. | 5 | Oral. Purpura. |
| 30 | 145–110 | 1 | M. | O.L.A. | 0 | | Feb. 21, 1909. | 3 | Oral. |
| 31 | 145–122 | 1 | S. | O.L.A. | 15 | Low forceps. | Feb. 24, 1909. | 2 | Oral. |
| 32 | 146–102 | 1 | M. | O.L.A. | 38 | Intermediate forceps. | April 21, 1909. | 6 | Oral. |
| 33 | 146–200 | 2 | M. | O.L.A. | 19 | High forceps | April 24, 1909. | 4 | Oral. |
| 34 | 148–224 | 1 | S. | O.L.A. | 20 | Slight sepsis. | April 30, 1909. | 3 | Nose and mouth. |
| 35 | 150–102 | 1 | M. | O.L.P. | 10 | | May 25, 1909. | 2 | Multiple hematomata. |
| 36 | 150–168 | 2 | M. | O.L.A. | 25 | | Sept. 22, 1909. | 3 | Hematuria. |
| 37 | 151–94 | 6 | M. | O.L.P. | 30 | | Dec. 20, 1909. | 3 | Mouth and nose. |
| 38 | 151–114 | 2 | M. | O.L.A. | 25 | | Dec. 24, 1909. | 2 | Rectum. |
| 39 | 152–96 | 3 | M. | O.L.P. | 15 | | Jan. 8, 1910. | 1 | Rectum. |
| 40 | 152–100 | 3 | M. | O.L.P. | 12 | | Jan. 19, 1910. | 3 | Rectum. |
| 41 | 152–104 | 4 | M. | O.L.A. | 4 | | Jan. 25, 1910. | 5 | Intravaginal. |
| 42 | 152–108 | 1 | M. | O.L.P. | 14 | | Feb. 3, 1910. | 14 | Rectum. |
| 43 | 152–112 | 2 | M. | O.L.A. | 15 | Intermediate forceps. Malaria. | Feb. 4, 1910. | 4 | Face. Rectum. |
| 44 | 152–120 | 1 | M. | O.L.P. | 10 | | Feb. 10, 1910. | 7 | Oral. |
| 45 | 152–122 | 1 | S. | O.L.A. | 12 | | Feb. 14, 1910. | 4 | Oral and nose. |
| 46 | 152–136 | 1 | M. | O.L.P. | 20 | Intermediate forceps. | Feb. 15, 1910. | 2 | Rectum. |
| 47 | 152–144 | 1 | M. | O.L.P. | 30 | Low forceps. | March 5, 1910. | 2 | Mouth. |
| 48 | 153–158 | 1 | M. | O.L.P. | 15 | | March 5, 1910. | 3 | Rectum. |
| 49 | 153–160 | 3 | S. | O.L.A. | 25 | | March 7, 1910. | 2 | Intravaginal. |
| 50 | 153–200 | 3 | M. | O.L.A. | 10 | | March 20, 1910. | 2 | Intravaginal. |
| 51 | 154–96 | 2 | M. | O.L.A. | 7 | | April 1, 1910. | 7 | Vagina. |
| 52 | 155–96 | 1 | M. | O.L.A. | 35 | | April 2, 1910. | 3 | Rectum. |
| 53 | 155–100 | 2 | M. | O.L.A. | 20 | | April 3, 1910. | 2 | Rectum. |
| 54 | 155–104 | 1 | M. | O.L.A. | 15 | | April 4, 1910. | 3 | Rectum. |
| 55 | 155–108 | 1 | M. | O.L.A. | 10 | | April 5, 1910. | 2 | Rectum. |
| 56 | 155–112 | 1 | M. | O.L.A. | 12 | | April 6, 1910. | 2 | Rectum. |
| 57 | 155–116 | 1 | M. | O.L.A. | 8 | | April 7, 1910. | 2 | Rectum. |
| 58 | 155–120 | 1 | M. | O.L.A. | 6 | | April 8, 1910. | 2 | Rectum. |
| 59 | 155–124 | 1 | M. | O.L.A. | 5 | | April 9, 1910. | 2 | Rectum. |
| 60 | 155–128 | 1 | M. | O.L.A. | 4 | | April 10, 1910. | 2 | Rectum. |
| 61 | 155–132 | 1 | M. | O.L.A. | 3 | | April 11, 1910. | 2 | Rectum. |
| 62 | 155–136 | 1 | M. | O.L.A. | 2 | | April 12, 1910. | 2 | Rectum. |
| 63 | 155–140 | 1 | M. | O.L.A. | 1 | | April 13, 1910. | 2 | Rectum. |
| 64 | 155–144 | 1 | M. | O.L.A. | 0 | | April 14, 1910. | 2 | Rectum. |
| 65 | 155–148 | 1 | M. | O.L.A. | 0 | | April 15, 1910. | 2 | Rectum. |
| 66 | 155–152 | 1 | M. | O.L.A. | 0 | | April 16, 1910. | 2 | Rectum. |
| 67 | 155–156 | 1 | M. | O.L.A. | 0 | | April 17, 1910. | 2 | Rectum. |
| 68 | 155–160 | 1 | M. | O.L.A. | 0 | | April 18, 1910. | 2 | Rectum. |
| 69 | 155–164 | 1 | M. | O.L.A. | 0 | | April 19, 1910. | 2 | Rectum. |
| 70 | 155–168 | 1 | M. | O.L.A. | 0 | | April 20, 1910. | 2 | Rectum. |
| 71 | 155–172 | 1 | M. | O.L.A. | 0 | | April 21, 1910. | 2 | Rectum. |
| 72 | 155–176 | 1 | M. | O.L.A. | 0 | | April 22, 1910. | 2 | Rectum. |
| 73 | 155–180 | 1 | M. | O.L.A. | 0 | | April 23, 1910. | 2 | Rectum. |
| 74 | 155–184 | 1 | M. | O.L.A. | 0 | | April 24, 1910. | 2 | Rectum. |
| 75 | 155–188 | 1 | M. | O.L.A. | 0 | | April 25, 1910. | 2 | Rectum. |
| 76 | 155–192 | 1 | M. | O.L.A. | 0 | | April 26, 1910. | 2 | Rectum. |
| 77 | 155–196 | 1 | M. | O.L.A. | 0 | | April 27, 1910. | 2 | Rectum. |
| 78 | 155–200 | 1 | M. | O.L.A. | 0 | | April 28, 1910. | 2 | Rectum. |
| 79 | 155–204 | 1 | M. | O.L.A. | 0 | | April 29, 1910. | 2 | Rectum. |
| 80 | 155–208 | 1 | M. | O.L.A. | 0 | | April 30, 1910. | 2 | Rectum. |

* BORN.

Totals: 721 | 1,650 = 7 to H. 30 M. | 175

March 20, there was not a single day when there was not in the hospital a baby who had, or had had, hemorrhagic disease.

The average age at onset for the entire series was three and one-half days. The average age at onset for the fatal cases was only slightly less, three and one-fifth days. The only two cases that began after the tenth day both recovered. The greatest age at onset among the fatal cases was nine days, but all the other fatal cases occurred under seven days. This would seem to indicate that after ten days the disease is infrequent and the prognosis good; that after a week, the prognosis is fairly good; but that under a week the prognosis is poor and the age at onset has no particular bearing on the prognosis.

The subject of the location of the hemorrhages raises at once the question of classification of types of the disease. Townsend tabulated his cases according to the source of the hemorrhage, and for the sake of comparison we have placed ours in a similar parallel table with his. It does not seem, however, that this method affords important information. Clinically the cases arrange themselves in three distinct groups as follows: First, those in which the hemorrhage is principally from the umbilicus; second, those in which it is principally from the mucous or serous membranes; third, those characterized principally by the formation of subcutaneous purpuric patches or ecchymoses. These types we have designated respectively the umbilical, the sero-mucous and the purpuric, according to which form of hemorrhage predominates. The important bearing of this classification is on prognosis. Grouped in this manner, the cases and their results in our series may be presented in the following table:

Comparative Tables of Sources of Bleeding in Hemorrhagic Cases.

| Sources. | Townsend's series. | Green and Swift's series. | Total. |
|---|---|---|---|
| Intestine, | 12 | 23 | 35 |
| Stomach, | 12 | 7 | 19 |
| Mouth, | 12 | 9 | 21 |
| Nose, | 8 | 7 | 15 |
| Navel, | 14 | 15 | 29 |
| Ecchymoses of skin, | 11 | 14 | 25 |
| Crack of skin, | 1 | 2 | 3 |
| All of above sources, | 3 | 0 | 3 |
| Meninges, | 0 | 2 | 2 |
| Genito-urinary tract, | 0 | 3 | 3 |
| Eyes, | 0 | 1 | 1 |
| Navel alone, | 2 | 6 | 8 |
| Gastro-intestinal tract alone, | 15 | 2 | 17 |
| Stomach, mouth and nose alone, | 7 | 2 | 9 |
| Intestines alone, | 3 | 9 | 12 |
| Ecchymoses alone, | 2 | 1 | 3 |

Classification of Hemorrhagic Cases.

| Clinical type. | Recoveries. | Deaths. | Total. |
|---|---|---|---|
| Umbilical, | 6 | 9 | 15 |
| Sero-mucous, | 13 | 14 | 27 |
| Purpuric, | 7 | 2 | 9 |
| | 26 | 25 | 51 |

It would appear from this that the mortality of the umbilical type is about 60%, that of the sero-mucous type about 50%, and that of the purpuric type about 22%. It remains to consider the various methods of treatment employed and the results obtained from each.

The treatment of hemorrhagic disease may be local or general or both. When possible, its aim is to check the actual hemorrhage and to prevent its recurrence by such measures as may increase the coagulability of the blood. The local agents employed are the same as those used to check hemorrhage under other conditions. Compression, adrenalin chloride and other astringents have been used, and sometimes seem of value in minimizing the amount of bleeding. In general, however, these agents are often as unsatisfactory as in other conditions. When the bleeding is from the gastro-intestinal tract, local application is impracticable, and the administration of paregoric to allay peristalsis seems to have little effect on bleeding. Attempts to check umbilical hemorrhage by pursestring suture are inadvisable, as the bleeding continues from the stitch-holes.

The general treatment of hemorrhagic disease may be grouped under three headings: First, the use of gelatine and calcium salts; second, the use of animal sera; third, the use of direct blood transfusion. It is instructive to consider these methods of treatment historically and with reference to results obtained.

At the time Dr. Townsend's paper was written, the treatment of hemorrhagic disease was essentially limited to local styptics and general supportive measures. Not long afterwards, the use of gelatine by mouth and rectum was advocated in hemophilia and cholemic hemorrhage, and was adopted in hemorrhagic disease of the newborn apparently with beneficial results. Dr. Townsend was enthusiastic in its use, and subsequently reported [4] a case in which it seemed of advantage. When the effect of Ca salts on the coagulability of the blood was discovered, these also were employed in hemorrhagic disease. Until 1908 these measures constituted the routine treatment of the disease.

In 1908, however, Leary's experiments with normal rabbit serum suggested its employment in this condition, and accordingly its use was begun at the Boston Lying-In Hospital. It was given subcutaneously in 30 ccm. doses, repeated two or three times, in case the bleeding recurred after the first dose. Opinions differ as to the value of this treatment. Its numerical results are indicated by the accompanying table.

Table of Methods of Treatment and Results.

| Treatment. | Recoveries. | Deaths. | Total. |
|---|---|---|---|
| General supportive, | 2 | 4 | 6 |
| Local hemostatic, | 2 | 5 | 7 |
| Gelatine, | 9 | 4 | 13 |
| Rabbit serum, | 12 | 10 | 22 |
| None, | 1 | 2 | 3 |
| | 26 | 25 | 51 |

Finally, Crile's experiments in direct blood transfusion suggested its use also in hemorrhagic disease, and it was employed in one case (No. 36) of this series, after a dose of rabbit serum had

failed to arrest bleeding. The transfusion was successful, but the patient died. This single case is, of course, inconclusive as to the therapeutic merits of this procedure. It has been followed by recovery in several cases, and in a recent article[5] Lespinasse and Fisher report its use in six collected cases with four recoveries, and speak enthusiastically in its favor as the ideal treatment. Without admitting this contention as proved, it seems that the method certainly deserves careful and extensive trial.

In the interpretation of the present series of cases there are to be taken into account several considerations which prevent its results from being conclusive or its percentages reliable indications, except in a general way. In the first place, there is some latitude of diagnosis; probably several cases included in the series were not really, and would not formerly have been considered, hemorrhagic disease. Second, the cases may be of various types and of varying degrees of severity, so that the apparent efficiency or inefficiency of any one method of treatment may depend not on its own merits, but on the type and severity of the cases treated by it. Third, in many cases several methods of treatment have been employed, so that in these cases neither recovery nor death can accurately be attributed to any one remedy.

Though all indications point to the probable infectious etiology of this disease, we believe that further study should be made of the microscopic blood picture in this condition, especially with reference to the platelet count. Research on this subject has already been undertaken by Dr. Swift, and its results will be presented in a later paper.

### CONCLUSIONS.

1. The parity and civil status of the mother, the fetal presentation, the duration of labor and the complications of labor and the puerperium are factors of no significance as predisposing or determining causes of hemorrhagic disease in the newborn.

2. The seasonal incidence and the occurrence of hospital cases in groups tend strongly to confirm the theory of the infectious etiology of the disease.

3. The earlier the onset of the disease, the worse its prognosis; after one week, the prognosis becomes relatively, and after ten days, absolutely, good.

4. Clinically the disease occurs in three fairly distinct types, the umbilical, the sero-mucous, and the purpuric, which have an approximate respective mortality of 60%, 50% and 22%. The gross total mortality is about 50%.

5. The treatment should be directed toward local hemostasis and increase of coagulability of the blood. Gelatine and rabbit serum are agents of proved value. Quiet and isolation are indicated in every case. Blood transfusion is a promising procedure which deserves further trial. The ideal treatment has not yet been demonstrated.

REFERENCES.

[1] Minot, F.: Am. Jour. Med. Sc., vol. xxiv (n. s.), p. 310.
[2] Townsend, C. W.: BOSTON MED. AND SURG. JOUR., vol. cxxv, p. 218.
[3] *Idem.*: Arch. Pediat., vol. xi, p. 559.
[4] *Idem.*: BOSTON MED. AND SURG. JOUR., vol. cliii, p. 638.
[5] Lespinasse and Fisher: Surg., Gynec. and Obstet., vol. xii, p. 40.

## MEDICAL INSPECTION OF SCHOOLS IN BOSTON, MASS.*

BY S. H. AYER, M.D.,
*Formerly Chief School Physician of Boston.*

WHEN I accepted the invitation sent to me by the secretary of the Boston 1915 Health Conference to speak before your association on the subject of the Medical Inspection of School Children, I supposed that my resignation of my office as chief school physician of Boston, which was accepted by the Board of Health, Feb. 3, was known to your secretary.

I was, therefore, a bit surprised, upon receiving the official notice of this meeting, to see following my name the title, "Chief School Physician of Boston." It seems to me proper, therefore, before making any remarks this afternoon, to have it clearly understood that I am not at present the chief school physician of Boston (as indicated by the notice). I will further state that my resignation was largely due to the fact that I could not afford to take necessary time from my private practice to fill the position in view of the slender salary it carried.

This subject of medical inspection of school children is so extensive, and has made such strides throughout the entire country during the last decade, that it will be impossible in the time allowed me to present it in any other than a general way.

*First conception of the work.* — Boston has the honor of being the pioneer in this work, and the thanks of the community are due primarily to Dr. Samuel H. Durgin, for many years chairman of the Board of Health, who first suggested it and then carried it into practical effect. This, however, he was not able to do without much effort, for it was a difficult undertaking to make those in authority recognize its value. It was another example of a man being ahead of his time.

About three years afterwards medical inspection of school children was started in New York City, representatives were sent to Boston to gather information of the way the work was carried on here, and Dr. Durgin was only too glad to enlighten them.

No one will question the value of this medical inspection of school children. At a meeting of the Alumni Association of the Boston City Hospital, held in this city last week, I was pleased to hear Dr. Charles W. Eliot say that he considered "the medical inspection of school children of the utmost importance," not only to the children of the present time, but to the coming generation, and he predicted that in thirty years from now there would be such marked changes among the school children both in bodily and mental vigor, due to this medical supervision, as can hardly

* Read at the Health Conference of the 1915 Movement, February 1911.

be foreseen at this time. He further said that the work required the employment of highly trained men and that it was noticeable that the health officers throughout the country were being better and better paid for their services.

*Lack of progress in Boston.* — Although Boston was first in this work, I am sorry to be obliged to admit that she has been outstripped in it by nearly all the large cities in the country who have taken it up. Indeed, she has not merely been outstripped, but almost left at the post, for there have been very few improvements in the methods of the school physicians of Boston since the work was begun some sixteen years ago. The men who are doing the work to-day are practically doing it in the same way as the men performed it in the beginning. This lack of progress has been due to a variety of reasons, and although the work has been under the supervision of the Board of Health, I do not hold it nearly as much responsible for this standing still as I do the politicians who have interfered with or controlled the board for their own purposes.

The Bureau of Municipal Research of New York City upon April 1, 1910, published data relative to the examination of school children for the following conditions:

Cities in which school children are examined for:

(1) Transmissible diseases.
(2) Defective vision.
(3) Breathing troubles.
(4) Defective teeth.
(5) Tubercular symptoms.

Cities reporting co-operation between schools and local dispensaries and hospitals:

1. One or more school nurses.
2. Instruction of parents in physical care of children.
3. Circulation of cards of instruction among parents.

In looking over this tabulation, I find the following cities were at that time ahead of Boston in considering these methods of inspection:

| | |
|---|---|
| California, | Berkeley and Pasadena. |
| Georgia, | Atlanta. |
| Maryland, | Baltimore. |
| Massachusetts, | Lowell. |
| Michigan, | Detroit. |
| Minnesota, | St. Paul. |
| New Jersey, | Jersey City and Newark. |
| New York, | Ithaca and Rochester. |
| Pennsylvania, | Pittsburg. |
| Washington, | Seattle. |

Cities doing practically the same amount of work as Boston at that time are:

Waltham, Mass.
St. Louis, Mo.
Cleveland, Ohio.
Newport, R. I.

Comment upon this tabulation is unnecessary. The facts speak for themselves and they show us where Boston stood April 1, 1910, in regard to medical inspection of school children.

*Political interference.* — Many times the Board of Health have endeavored to obtain funds to enable them to further this work, only to have the blue pencil drawn ruthlessly through their just demands. The work has also been seriously impaired by the appointment as school physicians by the mayor of men who, in the opinion of the board, were unfit for the work.

This is not only radically wrong, but an extremely short-sighted policy, and it is to be sincerely hoped will never occur again. Such action is not only an insult to the efficiency of the Board of Health, but a detriment to the health and physical welfare of the children of the citizens of Boston attending the public schools. At this point, I think it would be proper and right for me to say that the Board of Health of this city is, in my opinion, very far from being efficient, that its inefficiency is largely due to the fact that its members are too frequently changed. Can you conceive of any large business corporation every few years changing the personnel of its management for purely political reasons? Yet this is what has been done for years in the Boston Board of Health. What are the results?

The results are that new members of this board have no sooner been broken in to the duties of their position than they are removed from office by an incoming administration, whose appointees are in turn treated in a like manner a few years later. This means that the city is obliged to submit to an inferior management of its health department. In other words, your health as well as that of the entire community is being trifled with for merely political motives.

Again, the valuable time of the chairman of the board is being unnecessarily used in instructing these new members regarding their respective duties, time for which the citizens of Boston are paying in order to protect their health, and not in order that it be wasted in this way. Furthermore, if there is any friction among the members of the board, the chairman, the man whose opinion should prevail, is apt to find himself in the minority. How long would any progressive business manager of a business corporation stand such a condition of affairs? And if the corporation failed to earn the expected dividends, who would be to blame?

*Reorganization of Board of Health necessary.* — Now to overcome this condition, the head of the Board of Health should be one man, instead of three, and he should be given full power to manage his department to the best of his ability. He should be a man of the utmost intelligence as regards measures pertaining to health and should be paid a salary commensurate with the demands of his office, and be granted a liberal pension at the end of a certain period of service, which pension should be sufficiently large to make the position sought by the best brains on health problems in the country. Such a man should have able lieutenants to assist him in carrying out his plans, but these assistants should be of his own choosing and subject to his orders, he being held responsible for their acts.

So, then, make the Board of Health under one head, as has recently been done in other departments, place the responsibility for outlining and

carrying into effect the work of this department upon his shoulders, and if he does not succeed in "making good," look for a suitable successor. By such a plan the city will secure the best services, and, to my mind, by no other.

Until an arrangement of this kind is brought about and removed from politics, Boston must necessarily suffer from a markedly inferior administration of its health department.

Do not understand me at this time to be reflecting upon the ability of the present members of the Board of Health. Such is far from my purpose. I should like also to add that it is my opinion, as well as that of many other physicians in Boston, that there are other departments in this city now running under separate supervision that should be under the Board of Health,— the Consumptive Hospital, for example.

*The Boston school physicians.* — But now to return to the subject matter. The school physicians of the city of Boston are, as you are all aware, under the supervision of the Board of Health. The school nurses are under the supervision of the School Committee. During the past year I have given a great deal of thought to the subject of a plan whereby the school physicians and school nurses might satisfactorily carry on their work under the existing régime, and I have concluded it to be an absolute impossibility.

It is extremely unfortunate that such an arrangement should ever have been allowed. The school physicians and school nurses should both be ultimately responsible to the same head, the Board of Health; that is, the nurses should be under the immediate direction of the school physicians, and the school physicians should be responsible to the Board of Health for the carrying out of the work. Under the existing arrangement, there is necessarily much waste of time, actual reduplication of work by both physicians and nurse, and unnecessary using up of the children's hours of study. I know of no other city where such a condition exists, and until it is changed here and both the physicians and nurses are placed under one head, Boston will continue to be most seriously handicapped.

*Selection of school physicians.* — Work of this kind is of such value and importance to the welfare of the school children that extreme care should be insisted on in the selection of physicians receiving these appointments.

How then should these men be appointed?

I can see no reason why men appointed to the positions of school physicians to the city of Boston should not be obliged to pass a most thorough and rigid examination. These examinations should be carried on by physicians who should not be in any way hampered by politics. It is my belief that an examining board made up from representative physicians of Boston could be obtained without expense to the city, examination of candidates being held two or three times a year. I believe that reputable physicians could be found who would esteem it an honor to serve upon such a board. Under the existing conditions, I understand that the mayor's office is at times literally besieged by politicians endeavoring to obtain these appointments. Such condition of things is wrong and should not exist. Men receiving these appointments should obtain them on their merits, as do the house officers of the Boston City Hospital and the Massachusetts General Hospital, who are appointed to positions by the board of trustees of those institutions after competitive examinations.

*Security of appointments.* — Upon receiving such an appointment, after passing a satisfactory examination, a physician accepting the same should be given a feeling of security. He should not be continually made to feel that at any moment he is liable to be removed from his position without cause. In New York City these appointments come under the control of the civil service. Not only should these positions be made secure by an arrangement of this sort for the school physicians, but the same rule should apply to everybody from the chief school physician down through his various assistants.

Arrangements should be so made that the mayor should have nothing whatever to say about these appointments. They are out of his line. The ordinary mayor is not trained in such matters. His opinion regarding the fitness of a candidate for medical work is comparatively of no value, and the city is a loser by his having anything to say about it. In my opinion, too, the mayor should not desire to have anything to say regarding it, should welcome any change that would relieve him. It seems to me that if he could be relieved of this responsibility, if he could say to these petty, plausible, persistent politicians, continually coming to him to seek these appointments, that the matter was entirely out of his hands, it would be a saving to him of a great deal of brain fag and at the same time furnish him with just so much more time to devote to things that really need his oversight. I have no doubt that he would welcome such a change.

Such a plan as this exists in the Post-Office Department of the United States, and I have been told by a recent postmaster of Boston that the relief that such an arrangement afforded him could hardly be estimated.

*Salaries.* — We come now to the remuneration for the services rendered by the school physicians. Boston has ever since this movement of school inspection started been practically receiving charity from the men doing this work. Now although Boston is very much in debt, very much behind in its financial obligations, nevertheless I do not believe it would be the popular wish of the citizens of Boston that the hand of charity should be held out to enable the city to carry on their school inspection work. One man who has been doing this work ever since it started said that he took the position because he wanted to see what was going on in the schools; he wanted to know how his children were being taken care of, and after getting into the work he became so interested in it he was very loath to give it up. I have no doubt that this opinion prevails in the minds of a very large number of school physicians

of Boston to-day who have children attending the public schools. The work is interesting, it is highly interesting. Before being appointed chief school physician, I myself filled such a position for fifteen years. Although the work at times seriously interfered with my private practice, I disliked abandoning it. But we are now coming to a time when a change has got to be made.

When the work started, it was new, it was untried, the value of such work could not readily be estimated. The Board of Health could not at that time determine what salary should be paid for such services. Nevertheless, it was not long before they discovered that the salaries that were being paid to these physicians for this work were entirely inadequate and accordingly efforts were made, from time to time, to increase the salaries, only, however, to be turned down each and every time by those in power and authority.

Now a new deal is contemplated and it seems to me, although in early days other cities came to Boston for the purpose of learning what they could regarding this work, Boston can very well investigate the salaries that are being paid for this work in other localities. I believe that I am safe in saying that there is no city compared with Boston in size where the salaries paid for this work are so small. Last fall it was proposed to reduce the number of inspecting physicians to forty and pay them $1,000 a year. Now I hear it has been decided to pay $500 yearly, a much less salary, and retain the original number, namely, eighty men, to do the work. The salary is not sufficiently large to secure good men and demand of them two hours of daily service. To be sure, there will be plenty of applicants for the positions at this salary, but the applicants must be of inferior grade. The consequence will be that the work will not be thoroughly done. The school work is bound to increase rather than diminish. One thousand dollars would be very small compensation for the services rendered.

If private individuals in case of illness seek out the best medical aid possible for their children, why should the municipality offer an inferior article for their children in the schools? There is, to my mind, no satisfactory answer to this question.

*Situation in New York City.* — Perhaps it would be interesting at this point if I were to state the salaries paid in New York City for this work. They are as follows: Chief school physician, salary of $3,000 a year and the use and upkeep of an automobile.

There are five borough chiefs, so-called, who receive salaries as follows:

| | |
|---|---|
| Borough chief of Manhattan, | $2,550 |
| Brooklyn, | $1,950 |
| Richmond, | $1,500 |
| Queens, | $1,500 |
| Bronx, | $1,500 |

In addition to this, they have a division termed supervising medical inspectors consisting of six men. These receive $1,500 a year. Following these come the 141 medical inspectors whose work corresponds to our school physicians. They receive $1,200 each per annum. For this work these men are compelled to give all their time between nine and twelve o'clock every day in the week, including Saturdays, the first five days being devoted to the schools and, as I understand it, the Saturdays to visiting the homes.

Boston, of course, does not require such a large force of men to do the work, but they require a chief school physician, who should have at least two assistants to carry out his orders. There is no reason, to my mind, if the men appointed to fill these positions in Boston devote as much of their time to the work as the men in New York, why they should not receive as high a salary. In Cleveland, Ohio, salaries for doing the work are exceedingly large. Even at $1,200 per year for a medical inspector it would be impossible for many of the men now doing the work to retain their positions on account of serious interference with their private practice. Such was my own reason for handing in my resignation.

*Ridicule should be avoided.* — Therefore it seems to me that Boston does not want to have the finger of ridicule pointed at her any longer by these progressive cities to the west of us. Boston cannot afford to be made the laughing stock of the whole country by pleading poverty at this time.

*Increase taxes if necessary to raise funds.* — I do not think it would be wise for Boston to increase the debt to enable them to further this work, but there is no reason whatever why the necessary funds should not be raised by direct taxation. What does it matter if the tax-rate is increased a few cents more or less, if by so doing we are looking out for the health of our school children? How could money be better employed? I do not believe there is a taxpayer in Boston who would come out and object to an increase in the tax-rate of this city caused by the raising of funds to enable the city to better the physicial condition of the school children, who will become its future citizens. It is absurd for any managing body of any city to try to keep down the tax-rate with no better excuse than this. So, in my opinion, enough money should be provided by the city to pay salaries for this work sufficiently large to enable the securing of the very best men.

*Politics.* — A few days ago, a prominent young physician of Boston told me that when the proposed change of raising salaries to $1,000 per year was talked of, he was approached by a man who asked him if he would like one of these positions. This physician decided he did not care for it. "What," said the man, "would you not care for a position at $1,000 per year?" "No," he replied, "I do not think I could give the necessary time." "Well, if you want it, I can fit it for you," was the reply. That man was a politician. It is deplorable that such a condition of things as this exists in this or any other city. Until, as I have said, some arrangement is made whereby this work can be removed from politics, such incidents as I have related are bound to be of common occurrence.

*Conclusion.* — It is my hope that in any reorgan-

ization of this work in Boston, those having authority will wake up to the fact that they must be willing to pay for what they get. They must so arrange the work that the men appointed to these positions cannot in any way be secured by "pull" of the political heelers, and that the whole arrangement of the school work will be so constructed as to remove City Hall from any say in the matter whatever. Also, that the work shall be so planned that the nurses and the school physicians will be under one head, and not, as at present, under the supervision of two bodies, namely, the Board of Health and the School Committee.

All medical schools should have a course especially designed to train students for positions in medical school inspection. This course should be most comprehensive and thorough. Arrangements should be made in all the large cities where such courses are held for the students to receive practical demonstrations from time to time in the public schools.

## Clinical Department.

### A SIMPLE, QUICKLY REMOVABLE HEAD BANDAGE.

BY EBEN C. HILL, M.D., U. S. A.

(Published with the consent of the Surgeon-General, United States Army.)

IN treating a recent case of gunshot injury to the lower maxilla in which a portion of the bone was destroyed and wiring was demanded, I had occasion to redress and irrigate the wound several times a day. A firm bandage was needed to support the jaw until bony union took place, and



Head bandage.

any of the usual head bandages required considerable time to adjust and were difficult to maintain in the same position. Should the bandage become loosened during sleep, then the necessary support was lost until the part was rebandaged.

The photographs show an improvised arrangement by which I obtained ready access to the part, any desired degree of pressure on the maxilla and an easily adjusted and secure bandage. All that was needed was an ordinary surgeon's cap of unbleached muslin, three safety pins and a strip of gauze.



Head bandage.

I believe that this bandage could be successfully employed in many other instances of head injuries in place of the more cumbersome Barton or other head bandage.

## Reports of Societies.

### BOSTON MEDICAL LIBRARY IN CONJUNCTION WITH THE SUFFOLK DISTRICT MEDICAL SOCIETY.

MEETING OF DEC. 21, 1910.

DR. JAMES P. TUTTLE, New York, read a paper on

FIBROUS STRICTURE OF THE RECTUM.[1]

DISCUSSION.

DR. F. J. COTTON. My experience with these benign strictures has been small and most of those I have seen have been of the post-operative type.

Out of a total of eight, one has resulted from scar contraction in a cancer excision (this case is still in progress of dilatation). Three had followed hemorrhoidal operations (all yielded promptly to treatment with dilators), one followed the general scar contraction of a huge dissecting ischiorectal abscess (but yielded readily to dilatation), two were associated with rather extensive rectal tubercular infiltrations (these were little benefited by any treatment), while one only seemed the result of a real primary periproctitis, assumed to be of syphilitic origin. This last case refused treatment.

I have had no cases calling for very radical treatment.

I was rather surprised at the writer's advocacy of a colostomy high up in the transverse colon; from my experience of the Quénu (or Mayo) operation for cancer, I have felt that a preliminary colostomy in the descending colon (provided said descending colon

[1] See JOURNAL, p. 445.

was well dragged down) offered no obstacle to the later operation.

Dr. F. B. Harrington: An examination of the records at the Massachusetts General Hospital indicates that nearly 75% of the cases of non-malignant stricture of the rectum occur in women. It is an interesting fact that the cases of cancer of the rectum in the same institution show nearly three times as many in the male as in the female.

About 90% of the non-malignant strictures in women occur in those who have been married.

These facts suggest that the trauma of childbearing is a potent cause.

In women, also, the opportunity for local infection of the rectum by gonorrhea and syphilis is greater than in men. Proctitis from any cause, whether traumatic, catarrhal or ulcerative, may invade the submucosa, the muscular coats and the perirectal tissues, producing stricture, as the same processes do in other parts of the alimentary canal, for example, the esophagus, the duodenum and the appendix, or as inflammation and trauma do in the urethral canal.

The influence of syphilis in producing stricture of the rectum has been overestimated. I recall but one case in a considerable number which have come under my observation in which syphilis existed, and in this case it was not proved as a cause.

I have never seen a case of complete obstruction of the bowels in a case of stricture of the rectum. I have thought that this resulted from the more fixed condition of the walls than that which exists in the intestine higher up.

My treatment has been largely conservative. I use bougies and teach patients to use them. I have cut narrow strictures in a few instances with benefit. In two cases with extensive ulceration and stricture I have done colostomy, restoring the patients to comparative health from conditions of great debility and wretchedness.

One of these cases I have followed for five years hoping for such improvement in the rectum that restoration of the natural channel would be justified. In this case the ulcerations have healed, but the stricture of the rectum has become so extensive and so tight that operation of restoration is not possible.

This would seem to be a desirable case for operation of extirpation of the rectum proposed by Dr. Tuttle.

Dr. Charles L. Scudder: I understand that by non-malignant stricture of the rectum is meant a stricture of inflammatory origin. The primary cause of the inflammation may be a simple infection or an infection from tuberculosis or syphilis.

The pathological change common to those three types of infection is the formation of much fibrous tissue in the submucous and muscle layer of the intestinal wall. The pathologist is often unable to state with accuracy whether or not the tissue submitted to him from the stricture is of tuberculous or syphilitic origin. All traces of the initial infecting agent may be wiped out.

If tuberculosis or syphilis is known to be present in the patient with rectal stricture it is presumptive evidence that the stricture is dependent upon that particular disease. It is possible that a stricture of simple inflammatory origin may exist in a tuberculous or syphilitic individual.

It is conceivable that if these cases of stricture of the rectum were seen in the initial stage of the disease before the narrowing of the bowel has occurred, certain of these cases might progress no further. The employment in these cases of hygienic care with regard to food and bowel movements, the efficient dilatation of the bowel not yet much constricted, and anti-syphilitic treatment, — the employment of these three measures should in a few of the early cases check the progress of the disease and the most distressing obstructive stage of rectal stricture might be avoided.

Obstructive stricture of the rectum is a terrible disease. It is insidious in its onset, it is ever increasingly difficult to satisfactorily treat.

I have carefully searched the records of the Massachusetts General Hospital from 1872 to 1909 inclusive for cases of benign rectal stricture. I find that there is a total of 124 cases. This is not a large number to have entered the hospital in thirty-seven years. It is an average of a little more than three each year. There is no doubt but that if more satisfactory treatment could be offered these cases than is offered at present, there would be a larger number seeking relief at our general hospitals.

Each of these 124 cases represented the usual terminal condition in the disease under consideration, that is, each case was suffering from rectal obstruction. There were no cases in the early stage of the disease. There were a few cases in the ulcerative stage with discharges of mucus, pus and blood from the rectum, but the obstructive symptom was that from which relief was sought in every instance.

Of these 124 cases, 85 were women, 39 were men.

Of these 124 cases, the cause of the stricture was not discoverable in 18.

Syphilis was the probable cause in 57 cases.

Tuberculosis in two cases seemed to be the primary factor in the etiology.

The stricture followed perirectal abscesses in 12 cases and fistula in ano and perirectal abscesses in 23 cases.

Two cases gave a very definite history of dysentery. One of these patients lived in the Philippines at the time of the dysentery.

Stricture of the rectum followed in one case a complete tear of the perineum. This tear extended through the rectal sphincter.

In one case stricture followed the wound caused by sitting upon a nail.

In 6 cases it was discovered that a former operation for hemorrhoids had been performed. What operation was done was not stated. The symptoms in these cases dated from the hemorrhoidal operation.

There were 2 cases of congenital occlusion of the rectum.

Thus, in these 124 cases, a simple infection, tuberculosis and syphilis form the chief etiological factors. From an etiological point of view this series of cases is certainly fairly representative.

*Treatment.* — Ninety-eight of these 124 cases were treated by simple dilatation of the rectal narrowing. Dilatation was and is the leading method of treating these cases of benign rectal stricture.

Great improvement in recent years has taken place in the exact method of dilatation, so that the risks of dilatation are very much diminished.

In 1872 the dilatation of a rectal stricture was in some cases rather a blind method. In these 98 cases dilated with bougies there were 6 deaths apparently attributable to the dilatation. These deaths occurred within three days or so of the operation and were associated with chills, nausea and vomiting and abdominal distention and tenderness. Evidently the deaths were due to peritonitis occasioned by the passage of the bougie either through the rectal wall or so damaging the rectal wall that a fatal peritonitis followed.

There were 5 cases of recto-vaginal fistulæ associated with rectal stricture.

Those cases operated upon by some more radical procedure than simple dilatation were as follows:

Four strictures were removed, one by the perineal route, one by the sacral route without previous colostomy, one by the sacral route with subsequent colostomy, one by the sacral route preceded by a colostomy.

On one case a proctoplasty was done through a sacral incision followed by a colostomy.

One case had a partial proctotomy done.

One case was excised by Whitehead's approach.

All of the strictures in this series of cases were within 2½ inches to 3 inches of the anal margin.

Up to 1890 only a very few cases of excision had been done in any clinic.

The operative procedures in these cases were done comparatively recently. The earliest noted in this series at the Massachusetts General Hospital was that done in 1903. This is about the time that the Germans were first very generally operating upon these cases.

The analysis of this series of cases and their treatment not only illustrates the etiology and pathology of this distressing disease as it is understood to-day, but such a review discloses the fact that excepting electrolysis and cauterization, all methods have been tried at the Massachusetts General Hospital clinic including, (1) partial proctotomy, introduced by Stafford in 1834, comparable to the operation of internal urethrotomy; (2) including complete proctotomy introduced by Humphries in 1856, and (3) including excision done in 1825 by Lisfranc.

The results in the operative cases known are only temporary relief, and later a recurrence of the stricture necessitating the continual employment of bougies.

Mention must be made here of the procedure described by Lothrop [2] in which a proctoplasty was done by an anterior route in a female patient after separating the posterior vaginal wall from the rectum. All of these methods have been found more or less unsatisfactory.

In many cases the stricture has recurred and has sometimes been much more severe than it was previous to operation.

From the work of Tuttle, Thiem and Lowson and others it would seem that in a benign stricture of the rectum in the lower few inches inoperable by excision or proctotomy, or when it has recurred after these operations, a colostomy securing rest to the part and dilatation of the stricture from above may be successful treatment.

That colostomy has a lasting beneficial effect upon the stricture in addition to its palliation of the symptoms of obstruction, that excision of the stricture is usually unsatisfactory and that the complete perineal extirpation in certain cases is a satisfactory operation, these three facts seem to me to be those from Dr. Tuttle's paper upon benign stricture of the rectum which call for especial emphasis.

DR. T. CHITTENDEN HILL: In closing this discussion, I wish to say that I am heartily in accord with the position taken by Dr. Tuttle in his paper, that a total extirpation is the only procedure which offers much hope of a permanent cure.

Also I wish to express my entire faith in the work done by Dr. Tuttle, and congratulate him on his low mortality of but 6%, an improvement on the immediate mortality as taken from the literature, which varies from 12 to 18%.

I have seen him on several occasions do his operation, and in other cases have seen the results of his work.

It must be remembered that he has done this operation a great many more times than most surgeons, and when we take into consideration his large experience with the operation in cancer of the rectum, his results, while the best yet reported, are not greatly to be wondered at.

I believe this large mortality is in a measure avoidable, if the technic of the operation as described here to-night were more carefully followed. The success of this operation in addition to a wise selection of cases is attributable chiefly to two things, first, an aseptic technic, and, secondly, to a high loosening of the rectum.

The very first step of dissecting a cuff of mucous membrane at the anal orifice, and tying a string about it and cauterizing the end, insures an aseptic technic, always providing one does not tear or puncture the walls of the gut later, and that there are no fistulous sinuses in the immediate vicinity that will infect the field of operation. These adjacent infections can usually be determined by the amount of purulent discharge previous to operation and should always be taken into consideration before advising an extirpation.

In addition to the aseptic technic, by crowding back or opening the peritoneum and dividing the lateral attachments, one is able to free the rectum high up so that it is possible to get well above the strictured area and bring the gut down so that it can be amputated above the stricture and united without tension at the anus.

Dr. Cotton has stated that he cannot see the advantage of attempting to remove long sections of the rectum by the perineal route, but would prefer the combined method as advocated by the Mayos.

In his paper Dr. Tuttle has advocated the combined method as well, but, as a matter of fact, in the great majority of strictures, it is not necessary to subject the patient to so severe an operation. The combined operation has many advantages in carcinoma of the rectum, such as removing involved glands, etc., which are of no consequence in the treatment of benign stricture.

Therefore, if the strictured area can be readily removed from below, it is the safer method and answers every purpose as well.

In reference to what Dr. Cotton has said about its being unnecessary to do a colostomy in the transverse colon, I would say that in the majority of cases it probably is not, but one never knows beforehand the length of the sigmoid. In some cases it may be three feet, while in others it may be very short, making it impossible to pull the bowel down to the required extent when it is attached above to the abdominal wall.

Dr. Tuttle has called attention to some of the dangers in connection with removal of cicatricial stricture and that this method is not suitable in cases of extensive ulceration and suppuration of the rectum.

In an extirpation, the internal sphincter and levator ani muscles are always sacrificed, and although the external sphincter is preserved and in the majority of cases prevents incontinence, still, the resulting condition is more or less an artificial one. Its great advantage is that it is in the normal position and patients prefer it to an inguinal anus.

For *this reason, I believe that* in uncomplicated strictures one is never justified in resorting at once to operative measures, until gradual dilation with bougies has been tried.

The *duration of the stenosis* is an important factor in the amenability to dilation, but there are very few cases in my experience that are not improved, and some cases can be made perfectly comfortable for years.

The dilation should be carried on with gentleness and persevered in until the stricture has been dilated sufficiently to admit easily the ordinary index finger. This is *quite enough* for the purpose of effective de-

[2] BOSTON MED. AND SURG. JOUR.

fecation if kept at this diameter by passing the bougies at such intervals as are found necessary.

Some surgeons dilate to 1½ inches, but this is liable to split the walls of the gut and set up perirectal suppuration, causes pain and more or less discomfort without affording compensating benefits.

*I wish to speak of the fact mentioned in the paper* regarding stricture of the rectum following hemorrhoid operations and that cases operated should be watched carefully whatever method is used for removing them, if there seems to be any tendency towards stenosis.

I have now under treatment a case of annular stricture at the level of the internal sphincter that would barely admit a No. 3 Wales bougie that was caused by a Whitehead operation. As attempts at dilation were painful, the stricture was divided on both sides and posteriorly.

As this case came under observation four months following the hemorrhoid operation, I believe this simple measure will effect a cure.

As *another instance* of the importance of keeping track of *hemorrhoid* cases, I wish to report another case.

The following notes were furnished me from the surgical records of one of our large hospitals: "G. R., married, age twenty-two, admitted to hospital Sept. 28, 1903. Present illness: For two years patient has been troubled by itching and bleeding about her anus with much pain on defecation unless she keeps movements very loose. Sept. 29, operation by clamp and cautery for hemorrhoids. Oct. 5, discharged well." June 5, 1906, two years and nine months later, I saw this case through the courtesy of Dr. Stuart, of South Boston. At that time, she was in a miserable condition, had lost 26 lb. in weight, and had a profuse mucopurulent bloody discharge associated with a great deal of straining and tenesmus. The act of defecation had gradually become very difficult and irregular, necessitating a variety of purgatives, which afforded little relief. Because of the muco-purulent accumulations she was obliged to go to the toilet frequently during the daytime, and three or four times every night. A digital examination revealed a dense tubular stricture two inches above the anus that would not admit the index finger.

I advised and began gradual dilation which afforded her much relief from tenesmus and painful defection, but the rectal ulceration as evidenced by the large amount of mucopurulent discharge continued, and her general health was so wretched that I performed an inguinal colostomy five months later, after which she regained her normal health in a short time.

This case is simply cited to call attention to the importance of passing the index finger to its full length into the rectum on the tenth or twelfth day following a hemorrhoidal operation. If no constriction is felt at this time, it is most improbable that any will take place, but if one is found, simply the introduction of the finger at intervals of five days for a period of two or three weeks will prevent any contraction following these operations.

In this particular case, however, it is impossible to state positively whether the stricture resulted from the operation or whether there was then present an infective ulceration with or without a stricture which was overlooked.

The statement in her history of "bleeding about her anus with much pain on defecation unless she keeps her movements very loose" is quite suggestive of ulceration or stricture.

Two and one-half years after the colostomy she went through a normal labor and is now nursing an infant eleven months old. Although she had been married ten years, this was her first pregnancy.

## Book Reviews.

*The Bradshaw Lecture on Cancer.* By Sir ALFRED PEARCE GOULD, K.C.V.O., M.S. Lond., F.R.C.S. Eng. London: John Bale, Sons & Danielsson. 1911.

In this lecture, delivered at the Royal College of Surgeons of England on Dec. 7, 1910, Mr. Gould reviews the bearing of recent discoveries in the biology of cancer on the probable nature, causes, curability and prevention of malignant disease. His conclusion that cancer is neither an infection nor an embryonic reversion, but a "breach or failure of fundamental cell law," hardly brings us nearer a solution of the problem, however, and is as unsatisfactory as most negative definitions.

*Diseases of Children for Nurses.* Including Infant Feeding, Therapeutic Measures Employed in Childhood, Treatment for Emergencies, Prophylaxis, Hygiene and Nursing. By ROBERT S. MCCOOMBS, M.D. Illustrated. Second edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company. 1911.

This textbook in pediatrics for nurses, one of a series issued by this firm, originally published in 1907, has now reached its second edition. It has been extensively revised, and the chapters on artifical feeding of infants and on intestinal diseases and therapeutics have been especially amplified and improved. The book, which was developed from a series of lectures to nurses at the Children's Hospital of Philadelphia, should be serviceable to teachers as well as to pupils and graduates. Its arrangement is excellent, and its illustrations many and admirable.

*Annual Report of the Surgeon-General of the Public Health and Marine-Hospital Service of the United States.* For the fiscal year 1909. Washington: Government Printing Office. 1910.

This somewhat belated report, dated Nov. 30, 1909, describes the operations of the Public Health and Marine-Hospital Service from July 1, 1908, to June 30, 1909. The activities of the Service are numerous and varied, including domestic, insular and foreign quarantine, medical inspection of immigrants, and a large amount of scientific research and sanitation. The report contains much interesting and valuable information on a variety of special topics, with many tables of statistics. At its conclusion, the surgeon-general, Dr. Wyman, emphasizes the need of the Service for "enlargement of its facilities for furnishing information by distribution of its reports and other publications."

THE BOSTON

# Medical and Surgical Journal.

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## GARTH, DRYDEN AND "THE DISPENSARY."

IN his scholarly and interesting address before the Boston Society for Medical Improvement, on March 20, on "The History of the Royal College of Physicians of London," Dr. Thomas McCrae, of Baltimore, took occasion to refer to Dr. Samuel Garth, a distinguished member of the college, who played a prominent part in two notable episodes connected with that institution. This Dr. Grath, who constitutes a most picturesque and characteristic figure from the late Restoration and early pre-Georgian era, is one of an unfortunately limited number of men who have achieved reputation both in medicine and in literature, though his distinction in the latter field is due chiefly to a single poem. The details of his life have been most admirably presented by Dr. Harvey Cushing, of Baltimore, in a paper read in 1904 at a meeting of the Johns Hopkins Hospital Historical Club, and published in the *Johns Hopkins Hospital Bulletin* for January, 1906.

The first of the above episodes with which Dr. Garth was connected was the "dispensarian quarrel." In the latter part of the seventeenth century, contention arose between the physicians and the apothecaries of London, on account of the latter's custom of dispensing medicines directly to the poor, thereby keeping them from medical clinics, and pocketing the fees. The contestants were headed on the one side by the College of Physicians, on the other by the Apothecaries' Hall. The affair finally came to a riot in Warwick Lane and was ultimately settled in favor of the physicians. Garth celebrated it in a mock-heroic poem, "The Dispensary," which was first published in 1699 and went through a number of editions in a few years. Written in heroic couplets, with more of Dryden's ruggedness than of Pope's finish, the poem sounds monotonous and conventional enough to our modern ear; yet some parts of it are excellent descriptive verse notwithstanding. Most famous perhaps are the following lines:

"Febris is first: The Hag relentless hears
The Virgin's Sighs; and sees the Infant's Tears.
In her parch'd Eyeballs fiery Meteors reign;
And restless Ferments revel in each Vein.
Then Hydrops next appears amongst the Throng;
Bloated, and big, she slowly sails along.
But, like a Miser, in Excess she's poor;
And pines for Thirst amidst her wat'ry Store.
Whilst meagre Phthisis gives a silent Blow;
Her Stroaks are sure; but her Advances slow.
No loud Alarms, nor fierce Assaults are shown:
She starves the Fortress first; then takes the Town."

The second episode in which Garth was associated with the College of Physicians was Dryden's funeral. The poet laureate died on May 1, 1700. For some unknown reason his body was refused a public lying-in-state; and Garth, out of regard for his poetic master, procured its transference to the college, where, on May 13, he pronounced Dryden's funeral oration, a very fine prose composition. Invitations were issued by Garth to a number of friends "to Accompany the Corps of Mr. John Dryden, from the College of Physicians in Warwick Lane, to Westminster Abby"; and there "the corps" was "quietly inurn'd" in the Poets' Corner where now it rests.

This association of Samuel Garth with Dryden and with the "dispensarian quarrel" makes him interesting both as a poet and as a physician. In his sketch of Garth, in "The Lives of the Most Eminent English Poets," — to which we referred in last week's issue of the JOURNAL in an editorial on "Dr. Johnson and the Medical Profession," — Johnson says that Garth "was so much distinguished, by his conversation and accomplishments, as to obtain very extensive practice. He was made Physician in Ordinary to the King and Physician-General to the Army." For several reasons, then, Dr. Garth may well be remembered by the profession as one of its distinguished and interesting members.

## BERNARD SHAW AND THE DOCTORS.

PROBABLY few persons in the modern literary world, not even excepting Hall Caine and Marie Corelli and Elinor Glyn, have been so successful in getting themselves and their work talked about

as Mr. George Bernard Shaw. Not only does he almost outdo Gilbert Chesterton in his own field of paradox, but he is a more kaleidoscopic and ubiquitous genius even than that chameleon among writers. And he has not merely surpassed the moderns, but acknowledges that he has vastly improved on the dramatic methods of Shakespeare and Euripides. He has been viewed in many lights by many critics, and has been hailed as everything from the prophet of a new religion to the very arch-enemy himself. Latest of all comes Mr. Temple Scott, who, in an article in the March number of the *Forum*, proclaims "Bernard Shaw: The Realizer of Ideals," and declares that it is because he is the most virtuous man of his age that he transgresses all the virtues.

This somewhat startling statement, — which reminds one of Pope's "so obliging that he ne'er oblig'd," — is called forth by a consideration of Shaw's latest book, containing three plays, of which "The Doctor's Dilemma" seems most deserving of attention. The dilemma is essentially this, — whether the doctor shall save from death of tuberculosis, by means of a "culture" whose use he alone understands, a noble, worthy, but unsuccessful friend, or a worthless but brilliant artist with whose wife the doctor happens to be in love. The doctor saves his friend, the artist falls into the hands of a less expert physician and dies. And the play stops inscrutably. Apart from the medical impossibility of the plot and the absurdity of depicting a physician in such a situation, the conclusion is not even convincing as to whether the doctor followed the higher or the lower code of ethics, the former being, of course, that which Mr. Shaw professes.

In the preface to "The Doctor's Dilemma," Mr. Shaw expounds his theory of the problem by explaining that the fault is with the public, which persists in idealizing the doctors, and, by expecting them to live up to impossible standards, forces them into a perpetual bluff. This somewhat "lame and impotent conclusion" hardly seems to consort with Mr. Shaw, the realizer of ideals, but so Mr. Scott would interpret it. Mr. Shaw's own attitude towards the medical profession is summed up in the fourteen conclusions and maxims with which his preface ends. In substance, these are as follows:

"1. Nothing is more dangerous than a poor doctor — not even a poor employer or a poor landlord.

"2. Of all the anti-social vested interests, the worst is the vested interest in ill-health.

"3. Remember that an illness is a misdemeanor and treat the doctor as an accessory unless he notifies every case to the public health authority.

"4. Treat every death as a possible, and under our present system a probable, murder by making it the subject of a reasonably conducted inquest, and execute the doctor, if necessary, as a doctor, by striking him off the register.

"5. Make up your mind how many doctors the community needs to keep it well. Do not register more or less than this number, and let registration constitute the doctor a civil servant with a dignified living wage paid out of public funds.

"6. Municipalize Harley Street [the chief place of residence of London doctors].

"7. Treat the private operator exactly as you would treat a private executioner.

"8. Treat persons who profess to be able to cure disease as you treat fortune tellers.

"9. Keep the public carefully informed by special statistics and announcements of individual cases of all illnesses of doctors or in their families.

"10. Make it compulsory for a doctor using a brass plate to have inscribed on it, in addition to the letters indicating his qualifications, the words, 'Remember that I, too, am mortal.'

"11. In legislation and social organizations, proceed on the principle that invalids, meaning persons who cannot keep themselves alive by their own activities, cannot, beyond reason, expect to be kept alive by the activities of others. The theory that every individual alive is of infinite value is legislatively impracticable. The man who costs more than he is worth is doomed by sound hygiene as inexorably as by sound economics.

"12. Do not try to live forever. You will not succeed.

"13. Use your health, even to the point of wearing it out. That is what it is for. Spend all you have before you die, and do not outlive yourself.

"14. Take the utmost care to get well born and well brought up. Be particularly careful to have this done at the expense of the nation, the chances being about forty to one against your being able to pay for it directly yourself."

These fourteen articles may be taken for what they are worth. Some are sound, some trite, some seriously absurd, some quizzical. Even the doctors can afford to be amused by them, for usually he laughs better who laughs with Mr. Shaw than does he who laughs at him.

## LEGAL STATUS OF THE BLAZEK TWINS.

In last week's issue of the Journal we commented editorially on some interesting details associated with the pregnancy, labor and puerperium of one of the pygopagous twins, Rosa and Giuseppa Blazek. Some further details relative to these sisters have recently come to hand.

It appears that a short time ago, while they were on exhibition in a music hall at Berlin, a warrant was issued for the arrest of one of them for failure to comply with a judgment awarded against her in a suit for breach of contract. Being unable to separate the sisters, the officer seized and imprisoned both. The innocent sister immediately entered suit for illegal seizure and detention of her person. The case is to be tried in court, and the counsel for the plaintiff will argue that Rosa and Giuseppa are legally separate individuals and that the government must pay damages for infringement on the rights and liberties of one of them. This raises not only forensic complications, but the interesting questions whether the husband of one of them is a bigamist, and if not, what is the relation to him of the unmarried sister.

## THE QUESTION OF DUAL PERSONALITIES.

The problem of dual personalities has long interested writers of fiction, and of fact as well, and, since the days of Stevenson, has become part of the stock in trade of many authors. It is a fairly valuable literary asset, too, for it appeals to the innate human love of the supernatural. Moreover, it has a scientific foundation, now established in general recognition since the publication some years ago of Dr. Morton Prince's monograph on the subject, which has become as much of a classic in its way as the more generally famous and familiar "Dr. Jekyll and Mr. Hyde."

An instance of popular exploitation of the theory of dual personality may be found in an article by H. Addington Bruce in the February number of the *Cosmopolitan*. The author details at length several avowedly genuine cases of dissociated personality, and illustrates them by lurid pictures from the story of Dr. Jekyll. The tale is horrible, but yet fascinating in its suggestion.

As a matter of fact, the problem of dual personalities possesses no extreme psychologic difficulties. It is now pretty generally understood that in the human brain there are continually going on mental processes outside the immediate or habitual focus of consciousness. The sum total of these processes constitutes what is known as the subconsciousness. Normally the workings of this subconsciousness are fairly well correlated with those of every-day conscious life and flow on unnoticed in a stream which at most sometimes surprises the consciousness by tossing up into it the jetsam of unsuspected thought. To this subconsciousness we spontaneously relegate our routine mental processes, and in it remain such ideas as we deliberately or unwittingly exclude from conscious attention. Now from time to to time, in the experience of an individual, it may happen that such an idea or train of ideas gets segregated by the subconsciousness and elaborated and emphasized until its results produce startling and disconcerting disturbance when reinterjected into the consciousness which had perhaps purposely discarded them. And a co-ordinated series of such trains of ideas may actually assume the rank of a separate personality, prompting the conscious self to act in a manner inconsistent with its habitual deportment. When this stage is reached the condition has become pathologic, but within normal limits every one has at least a potential secondary personality.

In this normal secondary, subordinate self probably persist not only trains of thought that have been suppressed from the actual experience of the individual, but others that have been derived from his remote ancestry. Ages ago, when man first began his toilsome upward journey from the animal state, he began to suppress thoughts and emotions which he found disadvantageous to his progress; and ever since, these primitive mental states have recurred again and again, with unabated and often irresistible power, out of the subconsciousness to which they had been consigned, and have filled his descendants with the tantalization of uncomprehended allurement back to an abandoned natural past. To these recrudescent ideas and associations we owe most of our inarticulate pleasurable emotions in our contact with the natural world, — the sight of the clouds and the sky and the sea, the sound of thunder and of the winds, the smell of flowers and of the wet earth in spring. Moreover, to them we owe our temptation to conduct which the bitter experience of the race has proved inconsistent with the social ideal of civilization. Theologically this aspect of the subconsciousness has been expressed in the doctrine of original sin. Practically, the survivals of the secondary self remain the strongest link that binds man back to his remotely animal past.

Only when the subconscious self becomes dissociated, that is, breaks loose from control and determines injudicious conduct, does the problem of dual personality become of medical importance. At other times, and in the lives of the vast majority of persons, it remains an object of interesting study and psychologic reflection, a source often of pleasure, often of poignant pain. There is something exceedingly pathetic in the picture of man painfully climbing to heights that he hardly

wished to attain, and looking back, as he often must, with regret to past human associations and possibilities now no longer possible without abandoning all he has attained, and continually hearing from his primeval but now subjugated self the call of the wild which he has forever forsaken and to which he can return only at the peril of certain destruction. Happily, however, the picture is not always so sad; for sometimes, when the dominant self goes astray, as it sometimes will, a call from the subconsciousness may bring it back to more healthful associations and enable it to start again on the true path of progress.

## PROPOSED SUBSIDY FOR CHILDBEARING IN ILLINOIS.

It is reported from Chicago that there has recently been introduced, before the Illinois State Legislature, a bill providing for payment by the state of $100 to every woman who gives birth to a child within two years after her marriage, and $100 for each succeeding child born within two years after its next older brother or sister. A higher bonus is offered for twins and triplets. The bill provides that the money for this subsidy is to be raised by imposing on bachelors of thirty-five years and upwards such per capita tax as shall be necessary to obtain the required amount.

This ingenious piece of proposed legislation is hardly likely to be enacted into law, but it is interesting as a suggestion of the direction which may be followed by popular opinion, and of measures which may be taken to encourage human reproduction and put a premium on matrimony. Similar legislative propositions have been quite frequently put forward in France.

Incidentally it may be observed that the latest school census of Chicago shows that there are in that city 5,907 families, with 7 or more living children. Of these, 1,729 have 8 children, 679 have 9, 210 have 10, 55 have 11, 19 have 12, and 3 have 13. Two thousand one hundred and forty-three of these families are Polish or German.

## ORIENTAL AND OCCIDENTAL RATES OF INCREASE IN POPULATION.

Report from Calcutta states the present population of India as approximately 315,000,000, an increase of 20,500,000 since 1901.

Report from Vienna states the present population of Austria as 28,567,898, an increase of 2,417,190 since 1901.

Report from Budapest states the present population of Hungary as 20,850,700, an increase of 1,596,000.

Comparison of these figures is instructive. During the past decade the population of India has increased about 7%, that of Austria about 9%, and that of Hungary about 8%. Undoubtedly the birth-rate is much higher in India than in either of the other countries, but its death-rate is also higher, and its net gain is, therefore, relatively less, though of course actually much more than that of Austria and Hungary, whose lower, civilized birth-rate is offset by a lower death-rate. The prolific Hindoos gain in numbers at a proportionately slower rate than do the Teutons and the Magyars.

## MEDICAL NOTES.

Pertussis in Prussia. — A communication from Berlin states that there are annually in Prussia over fourteen thousand deaths from whooping cough among infants under two years of age.

Appointment of Dr. Ziegler at Pittsburg. — It is announced that Dr. Charles E. Ziegler has been appointed director of the Elizabeth Steel Magee Hospital for Women, soon to be erected at Pittsburg, Pa. Dr. Ziegler, who is a graduate of Dickinson College, received his medical degree in 1900 from the University of Pennsylvania.

Eradication of Hookworm Disease in Belgium.— Information from Belgium states that during the past few years a vigorous sanitary, prophylactic and curative campaign among miners in Liège has resulted in reducing by over eighty per cent the amount of uncinariasis, once extensively prevalent in that province.

European Typhoid Death-Rates. — A recent article in the *Revue Scientifique* states that in France the annual death-rate from typhoid fever is 77 per 100,000 of population. In England it is 17.5, and in the Netherlands and Germany, 10. During the past seventeen years about 160,000 persons have died in France of this preventable disease.

Plague and Smallpox at Amoy. — During the fortnight ending March 25, 11 deaths of bubonic plague and 6 deaths of smallpox were reported at Amoy, China. These make a total of 25 deaths from the former and 19 from the latter disease in that city during the six weeks from Feb. 11 to March 25.

END OF CHOLERA EPIDEMIC AT HONOLULU. — During the week ending March 25, no further cases of Asiatic cholera were reported at Honolulu, and the epidemic at that port is now considered at an end. There was a total of 27 cases and 21 deaths of the disease.

SMALLPOX IN NEW BRUNSWICK. — Report from Newcastle, N. B., states that, for the past six weeks, smallpox has been prevalent in the counties of Northumberland and Kent in that province. Eighty cases of the disease are said to have occurred in the single parish of Alnwick, near Newcastle.

SCARLET FEVER AT COLGATE. — It is reported from Hamilton, N. Y., that for the past five weeks scarlet fever has been epidemic among students at Colgate University in that town. Last week occurred the first death from the disease, and as a result the college has been closed until April 4.

BUBONIC PLAGUE AT TRINIDAD. — Report from Kingston, Jamaica, states that owing to the prevalence of bubonic plague in Trinidad, a quarantine against the latter island has been established at the port of Kingston. No intelligence has yet been received of the extent or severity of the epidemic at Trinidad.

ANTI-TYPHOID INOCULATION OF TROOPS IN THE FIELD. — It is reported from San Antonio, Tex., that voluntary anti-typhoid inoculation is being extensively performed among the American troops mobilized along the Mexican frontier, especially among commands that until recently have been quartered in the North.

A PRIVATE CHARITY IN BERLIN. — Recent report from Berlin describes a private charity in that city which maintains a diet kitchen for free daily distribution of food to the tuberculous poor. Over three hundred such persons are thus supplied. The food is prepared with great care and cleanliness and distributed in sterilized tin pails either by motor or bicycle delivery wagons. Candidates for this charity are nominated by the leading physicians of Berlin.

MAXIMS OF HYGIENE FROM VIRGINIA. — The Virginia State Health Department has recently published, for distribution among the people, a series of "health maxims," some of which are as follows:

"The man who says he had rather have smallpox than be vaccinated never had the smallpox."

"An open window is better than an open grave."

"Warm rooms have killed more people than ever froze to death."

"If you let the child have measles when he is young, you may save a doctor's bill later on, but you may have to pay the undertaker now."

"A good iron pump costs less than a case of typhoid."

"If your milkman brings you warm milk, make it hot for him."

"Wire screens in the windows may keep crape from the door."

"A fly in the milk often means a member of the family in the grave."

"If some people were as much afraid of flies as they are of bad water there would be less typhoid."

"When you see a child looking like an angel, do not kiss it; you might make a real angel out of it."

"Scarlatina may not sound so dangerous as scarlet fever, but ask the undertaker."

Like all epigrams, these maxims have a tendency to overstate the facts, but they seem to contain the essence of truth; and their form, if not always elegant, is perhaps best adapted to imprint their meaning on the popular mind.

## BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, March 21, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 46, scarlatina 49, typhoid fever 11, measles 151, smallpox 0, tuberculosis 74.

The death-rate of the reported deaths for the week ending March 21, 1911, was 20.97.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, March 25, 1911, was 272, against 265 the corresponding week of last year, showing an increase of 7 deaths, and making the death-rate for the week, 20.59. Of this number 135 were males and 137 were females; 263 were white and 9 colored; 174 were born in the United States, 96 in foreign countries and 2 unknown; 59 were of American parentage, 178 of foreign parentage and 35 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 40 cases and 3 deaths; scarlatina, 48 cases and 3 deaths; typhoid fever, 10 cases and 3 deaths; measles, 168 cases and 0 deaths; tuberculosis, 90 cases and 24 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 29, whooping cough 1, heart disease 32, bronchitis

3. There were 17 deaths from violent causes. The number of children who died under one year was 51; the number under five years, 71. The number of persons who died over sixty years of age was 69. The deaths in public institutions were 120.

Diphtheria at Winthrop. — Fifteen cases of diphtheria, with three deaths, have recently been reported at Winthrop, Mass., and in consequence the public schools of that town have been indefinitely closed.

Appointment of Miss Perry at Malden. — It is announced that Miss Charlotte M. Perry, of Bennington, Vt., a graduate of the Massachusetts General Hospital Training School, has been appointed superintendent of nurses at the Malden (Mass.) Hospital.

Two Bequests to Hospitals. — The will of Mrs. George Worthington, who died recently in New York, was filed on March 23 for probate at Pittsfield, Mass., for many years her summer home. Among numerous public and private charitable bequests it contains one of $25,000 to the Children's Hospital, Boston, and one of $5,000 to the Clarkson Memorial Hospital, Omaha, Neb.

Seizure of Jelly Beans at Providence. — Report from Providence, R. I., states that, on March 23, the United States inspectors seized in that city one thousand pounds of jelly beans, a confectionery shipped there from Buffalo, N. Y., and alleged to contain talcum. This is said to be the first seizure made in Providence under the Pure Food Law.

Exhibition at Industrial School. — On Thursday, Friday and Saturday of last week, March 23, 24 and 25, an exhibit was given at the Industrial School for Crippled and Deformed Children, Boston, of the work done by pupils of the institution. Proceeds of the sale of articles made by the children will be devoted to the running expenses of the school.

Report of Boston Association for Relief and Control of Tuberculosis. — The recently published seventh annual report of the Boston Association for the Relief and Control of Tuberculosis presents a statement of the work done by the association during the year ended Oct. 31, 1910, laying particular emphasis on the actual reduction of mortality from tuberculosis in Boston and on the value of the service rendered by the Prendergast Camp at Mattapan. The actual accomplishment of the association since its organization in 1903 is summarized under fourteen headings. This progress is reviewed and the future campaign to be undertaken is outlined.

Comparative Death-Rates in Boston and New York. — Recently published comparative statistics show that during the year 1910 the total death-rate per 1,000 inhabitants was 17.25 in Boston, 15.58 in Greater Boston, 16.52 in the Borough of Manhattan and 16.1 in Greater New York. The infantile death-rates under one year of age for the same districts were respectively 3.35, 2.82, 3.62, 3.40. This comparison essentially means that Greater Boston includes more semi-rural territory than does Greater New York, and that the conditions of infantile life seem to be somewhat better throughout Boston than they are in New York.

Hospital Concerts for April. — It is announced that during the month of April, the concerts of the Boston Hospital Music Fund will be given as follows: On April 2, at the Adams Nervine Asylum, Jamaica Plain; on April 9, at the Roxbury Home for Aged Women and Children; on April 20, at the Cullis Home for Consumptives, Grove Hall; on April 23, at the Carney Hospital, South Boston; on April 27, at the New England Peabody Home for Crippled Children, Hyde Park; on April 30, at the Boston Home for Incurables, Ashmont. This is the last month of these concerts for the season.

### NEW YORK.

Lutheran Hospital. — At a meeting of the Society of the Lutheran Hospital of the City of New York, which purposes to establish a hospital and dispensary under Lutheran church auspices, Dr. George Hayunga was elected president of the society.

Hygienic Drinking Fountains. — The Board of Education has decided upon the experimental installation of hygienic drinking fountains to replace the mischief-making tin cup in the public schools. One hundred and sixty-four of these are to be placed in certain schools in the various boroughs, and if they prove satisfactory all the schools will be provided with them. The type of fountain agreed upon for the test was selected by the superintendent of buildings and sanitary superintendent Walter Bensel, of the Health Department.

New House of Chemists' Club. — The new house, on East 41st Street, of the Chemists' Club was formally opened on March 17. In

the afternoon Dr. Morris Loeb, with appropriate remarks, presented the key of the building to Dr. Russell W. Moore, president of the club, and the auditorium was dedicated to the memory of Benjamin Thompson, Count Rumford, the first great American chemist, a bust of whom was unveiled. At the evening exercises the principal address was made by Dr. Jacques Loeb, of the Rockefeller Institute. In it he gave a *résumé* of experimental work on life processes, concluding with this prophetic declaration, "By the time of the celebration of the twenty-fifth anniversary of the building we have opened to-day, vast strides will have been made toward explaining all life actions in terms of actions of inanimate substances, and physiology will be well on the way to becoming a completed chemistry." An interesting feature of the exercise was a lecture by Prof. R. B. Moore, of Butler College, Indianapolis, on "Rare Gases of the Atmosphere," in the course of which he exhibited some specimens of such gases sent from London expressly for the occasion by their discoverer, Sir William Ramsay. The new building, which has been erected at a cost of $500,000, is believed to be the first of its kind in the world, combining, as it does, all the features of a first-class social club with admirably equipped laboratories for analytical and research work.

OLDEST ALUMNUS OF PRINCETON, A MEDICAL MISSIONARY. — The ninety-sixth birthday of Dr. James C. Hepburn, the oldest alumnus of Princeton University and a noted medical missionary, who has for some years resided at East Orange, N. J., was celebrated on March 15, and among the congratulatory letters received by him was one from Governor Wilson. For five years he was settled in Singapore, but in 1846 he returned to America, and for thirteen years practiced medicine in New York. In 1859 he was sent by the Presbyterian Board of Foreign Missions to Japan, and while there he in conjunction with two others made the first translation of the Bible into Japanese. On his ninetieth birthday Dr. Hepburn was presented by the Emperor of Japan with the insignia of the third class of the Imperial Order of the Rising Sun.

FACTS REGARDING DIPHTHERIA AT THE JOHNS HOPKINS HOSPITAL. — Dr. Snow, of London, having in one of his anti-vivisection lectures in New York expressed the opinion that the recent outbreak of diphtheria at the Johns Hopkins Hospital could be regarded as a refutation of the antitoxin theory, Dr. L. F. Barker, physician-in-chief to that hospital, has published a letter in which he states that it would seem to be important to let the public know that exactly the opposite is the truth. He then goes on to give the real facts, as follows: "As soon as the presence of diphtheria was discovered, the rigid application of bacteriologic methods of diagnosis and control, and of antitoxin therapy and antitoxin immunization, — methods which we owe almost entirely to experiments upon animals, — made it possible for us not only to prevent its spread and to completely stamp out the epidemic in the hospital and medical school in a couple of weeks, but also to cure every individual infected except two, who were at the time of their infection dying, one of them from general septicemia with ulcerative endocarditis, and the other from an advanced malignant growth in the abdomen. How any one can be led to make such irresponsible statements as those which have been attributed to Dr. Snow, it is difficult for any one trained by scientific methods and with a feeling for accuracy to understand."

EMPLOYMENT LIABILITY ACT UNCONSTITUTIONAL. — The Court of Appeals has declared the Employers' Liability Act, which was passed by the Legislature last year, contrary to the Constitution of the United States and to that of the state of New York. This decision, which was unanimous, was given at Albany on March 24. It was in the suit of Earl Ives, a railroad switchman, against a Buffalo street railway on account of injuries received in the performance of his duties, and the opinion of the Court was written by Judge Werner. The so-called Workmen's Compulsory Compensation Act was passed, it may be remembered, after the subject of employers' liability had been under investigation by a legislative commission for more than a year, and its validity has been upheld by the lower courts as well as by the Appellate Division of the New York Supreme Court, although the latter tribunal was divided on the question. The Court of Appeals holds that it is not competent to impose upon an employer who has omitted no legal duty and committed no wrong a liability based solely upon a legislative fiat that his business is inherently dangerous. The possibility that he might recover the damages thus paid by means of insurance, and that he might recoup himself for the cost of insurance by an added charge to his customers, is a secondary and remote consideration that the Court thinks

cannot be taken into account in deciding whether he has been deprived of his property or property rights by "due process of law." The right of property, Judge Werner says, rests not upon philosophical or scientific speculations, nor upon the commendable impulses of benevolence or charity, nor yet upon the dictates of natural justice. The right has its foundation in the fundamental law. That can be changed by the people, but not by legislatures. If such economic and sociological arguments as are here advanced in support of this statute can be allowed to subvert the fundamental idea of property, then there is no private right entirely safe, because there is no limitation upon the absolute decisions of legislatures, and the guarantees of the Constitution are a mere waste of words. He bestows ample commendation, however, upon the legislative commission, saying: "No word of praise could overstate the industry or intelligence of this commission in dealing with a subject of such manifold ramifications and of such far-reaching importance to the state, to employers and to employees."

## Current Literature.

### Medical Record.

March 18, 1911.

1. Knopf, S. A. *The Hygiene of Public Conveyances.*
2. Einhorn, M. *The Importance of the Thread Impregnation Test for the Recognition of Ulcers of the Upper Digestive Tract.*
3. Abbe, T. *Two Cases of Ainhum.*
4. Strasser, A. A. *Non Occides.*
5. Lydston, G. F. *A Sociological Experiment.*
6. Leale, M. *Multiple and Comminuted Fractures of the Metatarsal Bones in a Child, with Skiagraph.*
7. Colie, E. M. *Sudden Death following Spinal Puncture for Diagnosis.*
8. Dawbarn, R. H. M. *Short Talks with My Students and Others, Being Random Suggestions for the Younger Practitioners.*

### New York Medical Journal.

March 18, 1911.

1. *Deaver, J. B. *The Surgical Aspect of Gastric and Duodenal Ulcer.*
2. Aaron, C. D. *Stomach Disorders Requiring Surgical Intervention from the Viewpoint of an Internist.*
3. Wright, B. L. *The Treatment of Tuberculosis by Deep Muscular Injections of Mercury.*
4. Wright, J., and Strong, L. W. *Some Laboratory Notes on the Presence of the Fats and Lipoids in the Lesion of Rhinoscleroma and on Variations in Its Bacteriology.*
5. McGlinn, J. A. *The Relation of Gallstones to Cancer of the Bile Tract.*
6. Weil, H. *The Irrigation Treatment in Septic Abortion.*
7. Linty, W. *Individual Immunity.*
8. Beardsley, E. J. G. *Pneumothorax with Acute Abdominal Symptoms.*
9. Kornblüh, I. *Pinworms and Caraway Seed in Infantile Appendix.*

1. Deaver assents to the rather startling assertion of Codman that duodenal ulcer is almost as frequent as acute appendicitis. This condition has been rare in the past, simply because it has not been diagnosticated. A diagnosis can generally be made if an accurate detailed history is taken. The diagnosis of duodenal ulcer depends as almost no other disease upon the anamnesis alone. The most important symptom is dull, aching pain in the epigastrium coming on two or three hours after eating. The ulcer is situated just distal to the pylorus in the first or second inch of the duodenum, and begins as the small typical punched-out peptic ulcer. Many of these small ulcers heal spontaneously; others exist for years, giving symptoms only occasionally. Newly formed ulcers should be treated medically; chronic ulceration, surgically.

[L. D. C.]

### The Journal of the American Medical Association.

March 18, 1911.

1. Dana, C. L. *Interpretation of Pain and the Dysesthesias.*
2. *Lambert, R. A., and Hanes, F. M. *Migration by Ameboid Movement of Sarcoma Cells Growing in Vitro and Its Bearing on the Problem of the Spread of Malignant Growths in the Body.*
3. Moncure, P. S. P. St. L. *Duodenojejunostomy for Cure of Post-Operative Regurgitant Vomiting of Bile and Pancreatic Juices, following Gastro-Enterostomy.*
4. *Rodman, W. L. *Diagnosis of Mammary Tumors.*
5. Koch, W. *Recent Studies on Lipoids.*
6. *McKenna, C. H. *A Report on the Therapeutic Efficiency of Salvarsan.*
7. Branch, J. R. B. *A Case of Hematosalpinx with Cervical Atresia.*
8. Wilcox, A. G. *Arrested Development of Abdominal Parietes.*
9. Heidt, R. v. D. *Case of So-Called Bottle Maker's Cataract.*
10. Gordon, A. *Diagnostic Value of the Paradoxic Reflex.*
11. Clapp, C. A. *Autolysis of the Crystalline Lens: A Preliminary Report.*
12. *Arms, B. L., and Wade, E. M. *Tests of the Virulence of Diphtheria Bacilli.*
13. Pratt, J. A. *Treatment of Sinus and Middle-Ear Disease with the Vacuum Pump.*
14. Weinstock, L. *A Case of Primitive Obstetrics.*
15. Eidman, H. B. *A Method of Staining Granular Casts and Other Tube Products.*

2. Lambert and Hanes have demonstrated the ameboid movement of growing sarcoma cells in vitro and suggest the importance of this discovery in the explanation of the spread of malignant growths in the tissues of the body, especially of cancer into blood and lymph spaces and serous cavities.

4. Many important points are brought out in Rodman's paper on mammary tumors. Increasing experience teaches that an accurate diagnosis between benign and malignant growths is very seldom possible. About 16% of all breast tumors are benign; about 3% are sarcomatous; the rest are malignant. But benign tumors are so liable to malignant degeneration that they should be looked upon as potentially malignant. Abnormal involution is particularly liable to end in malignancy. The author draws a very clear picture of acute carcinoma of the breast, or carcinomatous mastitis, as it is described by Volkmann. It usually begins as a diffuse rather than as a discrete process. Not infrequently it is coincident with pregnancy. It runs a very rapid course, often destroying life in six months. As regards cysts, he quotes Halsted and Bloodgood, who positively state that not a single permanent cure has resulted from operations performed in the Johns Hopkins Hospital when the carcinomatous nature of a cyst was overlooked at the time of the first operation, even though a second complete operation was done soon afterwards. Retraction of the nipple is most significant, but not, as often stated by some high in authority, pathognomonic of carcinoma.

6. McKenna states that salvarsan under no circumstances should be used without also using mercury or the

iodides. If we could conceive of making a diagnosis of syphilis so early that not a single spirochete had become encapsulated, but all lay free in the circulation, we might then expect to kill them all with one single dose, but not otherwise. We should do everything in our power to eradicate the idea that appears to have become prevalent in the minds of the laity, and some of the profession, that a single dose of salvarsan will cure syphilis permanently. The intramuscular is the safest and should be tried before using the more dangerous intravenous method.

12. Arms and Wade consider that clinical diphtheria is caused by virulent diphtheria bacilli. As a rule, following clinical diphtheria, the organisms retain their virulence as long as they persist. Virulent and avirulent bacilli are not generally found in the same case. In outbreaks of the disease a large percentage of "carriers" harbor virulent bacilli, although such carriers may develop no symptoms. Cultures should be taken from all contacts before determining quarantine in all cases of diphtheria. [E. H. R.]

### The Archives of Internal Medicine.

#### February, 1911.

1. Van Zwaluwenburg, J. G., and Warren, L. F. *The Diagnostic Value of the Orthodiagram in Heart Disease.*
2. *Brem, W. *Studies of Malaria in Panama. II. Treatment of Blackwater Fever: Pernicious Malaria with Hemoglobinuria and Erythrolytic Hemoglobinuria.*
3. Miller, J. L. *Meralgia Paresthetica Due to Pressure of the Corset.*
4. Carpenter, T. M., and Murlin, J. R. *The Energy Metabolism of Mother and Child just before and just after Birth.*
5. *Thayer, W. S. *The Ameboid Activity of Megaloblasts.*
6. Cohn, A. E., and Kessel, L. *The Function of the Sino-Auricular Node.*
7. *Duval, C. W., and Gurd, F. B. *Studies on the Biology of and Immunity against the Bacillus of Leprosy, with a Consideration of the Possibility of Specific Treatment and Prophylaxis.*
8. Briggs, L. H. *A Blood Crisis Occurring with Primary Sarcoma of the Stomach.*
9. *Roper, J. C., and Stillman, R. G. *A Study of the Technic of the Cammidge Reaction and of the Substance Giving Rise to the So-Called Typical Crystals.*
10. Von Pirquet, C. E. *Allergy.*

2. Brem states some valuable conclusions from his studies of malaria in Panama. "Blackwater fever," he says, includes two types of hemoglobinuria more or less definitely associated with malaria. The two types differ in etiology and symptomatology and the indications for treatment are diametrically opposed. Type 1 is hemoglobinuria associated with pernicious malarial infections. The hemoglobinuria is probably brought about by immediate destruction of erythrocytes by enormous numbers of sporulating parasites, and the time of its appearance can generally be foretold with a fair degree of accuracy. The treatment is that of pernicious malarial fever. Type 2 is hemoglobinuria indefinitely associated with malaria and probably brought about by the solution of erythrocytes by an unknown hemolysin. It may be termed erythrolytic hemoglobinuria. In this second type quinine should never be given while hemoglobinuria is present; after the cessation of this symptom it should be given guardedly if parasites or fever persist or recur.

5. Thayer reports a case of pernicious anemia in which he observed characteristic ameboid movements in a megaloblast. Small round pseudopodia were projected, into which the colored protoplasm flowed in much the same manner seen with the ordinary intestinal amebæ. Slight changes in shape occurred at times in the nucleus. The movements of the cell were marked, strikingly like those in leucocytes, and entirely unlike the gradual changes of shape sometimes seen in red blood corpuscles in the fresh specimen. The change was so distinct that in the course of five minutes the whole picture was different. In conclusion, the writer observes that in the early stage of development represented by the megaloblast the red corpuscle is probably a cell with powers of active progression.

7. Duval and Gurd describe their researches on the pathogenicity and viability of B. lepræ and on immunity against this organism. They find that the bacilli of leprosy are capable of living and retaining their infectibility for months under adverse conditions outside the animal body; also that the bacilli can be cultivated from contaminated leprous tissue and from the nasal discharge that has been kept at room temperature for more than a year. All this shows the necessity of early diagnosis and the need of strict segregation of certain types of the disease. The animal experiments of the writers confirm the belief that the nasopharynx is the port through which the bacilli gain entrance to the body, as well as the chief source from which infection spreads. The bacilli may gain entrance through breaks in the skin without giving rise to lesions at the entrance site. The serum of patients contains antibodies, and complement is present in normal quantities. Specific amboceptors are present in comparatively large quantities, but only those combining with lipoid bodies. The authors hope to prepare a serum of sufficient antilipoid potency to be of service in the passive immunization of human cases. In the meantime they are continuing vaccine treatment and are attempting to produce an active immunity in animals.

9. Roper and Stillman made an exhaustive clinical study of the "improved" or "C" Cammidge test in which Cammidge claims, the presence or absence of pancreatitis is indicated by the examination of a single specimen. They base their conclusions on a large number of examinations in forty cases representing all types of disease. They find that the "C" reaction does not rest on a sound scientific basis. The formation of the typical crystals is due to the presence of glycuronic acid. As this substance is present in the urine of persons in normal health, and is increased in amount in many conditions in no way associated with disease of the pancreas, the demonstration of these crystals can have no diagnostic value. [L. D. C.]

### The Lancet.

#### Feb. 18, 1911.

1. Owen, E. *The Hunterian Oration on John Hunter and His Museum.*
2. Haslam, W. F. *The Lettsomian Lectures on Operations for Stone in the Male Bladder. I.*
3. Hawthorne, C. O. *The Sphygmomanometer and the Sphygmograph in Relation to the Measurement of Arterial Blood Pressures.*
4. Hinshelwood, J. *Eyestrain in Relation to the General Health.*
5. Harper, J. *Diffuse Latent Labyrinthitis: Its Dangers in the Radical Mastoid Operation.*
6. Dore, S. E. *The Present Position of the X-Ray Treatment of Ringworm.*
7. Sewell, L. *A Case of Deafness Arising from Epidemic Parotitis.*
8. Webber, H. W. *Note on a Case of Foreign Body in the Urinary Bladder.*

#### Feb. 25, 1911.

1. Emery, W. D'E. *Hunterian Lecture on the Immunity Reaction in Diagnosis, Especially of Tuberculosis and Syphilis.*
2. *Haslam, W. F. *Lettsomian Lectures on Operations for Stone in the Male Bladder. II.*
3. *Lees, D. B. *The Treatment of Pneumonia.*
4. Yearsley, M. *The Education of the Deaf: Its Present State in England, with Suggestions as to Its Future Modifications and Development.*
5. Mott, F. W. *Note upon the Examination, with Negative Results, of the Central Nervous System in a Case of Cured Human Trypanosomiasis.*
6. Marshall, C. F. *Remarks on the Treatment of Syphilis with Diazydiamido-Arsenobenzol ("606").*
7. Arany, S. A. *Contributions to the Physiology and Pathology of the Assimilation of Albumin.*
8. Staple, J. D. *A Case of So-Called "Insusceptibility to Vaccination."*
9. Hirsch, C. T. W. *Motoring Notes.*

2. Haslam, in the second of the Lettsomian Lectures, continues his historical review of the surgery of stone in the male bladder, bringing it down to 1880.

3. Lees, in his article on the treatment of pneumonia,

believes that ice bags applied to the chest will prevent the extension of a pneumococcus consolidation and that mild cases of pneumonia can be aborted by this method. He further advises leeches over the right border of the heart. He emphasizes the value of antiseptic inhalations and speaks of the success of vaccine treatment.

The article is neither sound nor convincing. [J. B. H.]

THE PRACTITIONER.

FEBRUARY, 1911.

1. BARKER, A. E. *The Improved Diagnosis of, and the Consequently More Hopeful Aspects of, the Surgery of Cancer of the Large Intestine.*
2. *RUSSELL, A. W. *Extraperitoneal Cæsarian Section and Its Scope in Modern Obstetric Surgery.*
3. *BROWNLEE, A. *General and Spinal Anesthesia.*
4. *RYALL, E. C. *The Indications and Contra-Indications for the Use of Spinal Anesthesia.*
5. *BRAITHWAITE, L. R. *Cocaine Anesthesia in Minor Surgery.*
6. RANKEN, W. *On the Administration of Anesthetics on the Open Mask.*
7. *FAIRLIE, H. P. *The Behavior of the Blood Pressure in Chloroform and Ether Anesthesia, with Special Reference to Shock.*
8. STRETTON, J. L. *The Surgical Treatment of Chronic Pleural Effusions.*
9. HIRD, R. B. *Neuroretinitis in Anemia.*
10. MALONEY, W. J. *The Relation of the Chemical Composition of Human Milk to Chronic Diarrhea and Eczema in Nurslings.*
11. REID, A. G. *The Treatment of Acute Pneumonia.*
12. THURSFIELD, H. *Review of Diseases of Children.*
13. YEARSLEY, M. *A Retrospect of Otology, 1910.*
14. DOUGLAS, A. R. *The Ament: His Position in the Community and His Influence on the Future of the Race.*
15. SHEPPARD, A. *Medical Practice in Stuart Times.*

2. Russell describes extraperitoneal Cæsarian section and enumerates the advantages of this operation and the special occasions when it is indicated.

3. Brownlee briefly goes over the history of general anesthesia and of spinal anesthesia. He compares the relative advantages of the two methods from the point of view of patient and surgeon, and the after-effects of the spinal method.

4. Ryall covers the same ground, somewhat more in detail, as in the previous article, in regard to the relative advantages and disadvantages of spinal versus general anesthesia.

5. Braithwaite, in a similar way, as above, discusses the use of cocaine as a general anesthetic.

7. Fairlie has made a careful study of blood pressure in ether and in chloroform anesthesia, and the subsequent shock to the patient. From his investigations he is led to believe that in prolonged operations blood pressure is more depressed, with consequently greater shock, in ether than in chloroform anesthesia. [J. B. H.]

EDINBURGH MEDICAL JOURNAL.

FEBRUARY, 1911.

1. *MACKINTOSH, A. W., FALCONER, A. W., AND ANDERSON, A. G. *Congenital Family Cholemia.*
2. DOW, A. *Some Operative Procedures about the Knee-Joint.*
3. *LOW, C. R. *Fungous Infections of the Finger Nails.*
4. *WATSON-WEMYSS, H. L. *Erythremia; with Notes on Two Cases.*
5. MELLAND, C. H. *Some Conditions Associated with Enlargement of Lymphatic Glands.*

1. The writers report in detail on a case of this interesting condition which was very carefully worked up. The principal features were chronic icterus dating from a few weeks after birth, markedly enlarged spleen, a normal liver and very definite changes in the blood. They discuss these features at length, as well as previously reported cases. In differential diagnosis they consider splenic anemia, hypertrophic cirrhosis of the liver, syphilis, pernicious anemia, leukanemia and others. There is a complete and excellent bibliography. The article is well worth reading.

3. Low, in a paper illustrated with excellent plates, discusses the various fungous infections of the finger nails under three groups: (1) Ringworm of the nails, (2) favus of the nails, (3) a fungous infection of unknown origin. The subject is carefully and interestingly worked out.

4. Watson-Wemyss reports two cases of erythremia and discusses the general subject. He divides polycythemia into two classes, relative and absolute. The absolute he subdivides into erythrocytosis, an increase in reds, the result of a vital reaction on the part of the organism: and erythremia, excessive red blood corpuscles of unknown origin corresponding to leukemia. He subdivides cases of erythremia into further groups according to high or low blood pressure, large or small spleen, etc. The characteristics of the blood are (1) an absolute and persistent polycythemia, (2) a considerable leucocytosis, (3) a great increase in viscosity and (4) in the total volume. He discusses different theories as to the etiology of this condition: That it is (1) a primary myelopathy, (2) splenic tuberculosis, (3) diminished destructibility of the red cells, (4) diminished oxygen-carrying power. [J. B. H.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 8.

FEB. 23, 1911.

1. SCHULTZE, E. *The Recognition and Treatment of Multiple Sclerosis in Its Early Stages.* (*Clinical Lecture.*) (To be continued.)
2. *MÖLLERS, B. *The Type of Tubercle Bacilli in the Sputum of Consumptives.*
3. *ROTHE. *Investigations on Tuberculous Infection in Childhood.*
4. *JACOBY, E. *My Method of Hyperemia Treatment of Pulmonary Tuberculosis.*
5. BREDOW, F. *Occurrence and Cause of Muscle Rigidity in the Upper Thoracic Region.*
6. PERCATORE. *Observations on Bronchial Asthma.*
7. ASCOLI. *Biologic Diagnosis of Anthrax by the Precipitation Method.*
8. POLLACI, G. *The Technic of Rapid Bacterial Diagnosis in Asiatic Cholera.*
9. JOANNIDES, N. Z. *The Treatment of Syphilis with Salvarsan.*
10. PLOCH, F. *Cure of an Esophageal Stricture with Fibrolysin.*
11. MÜLLER, A. *A Toxicity Experiment with Bromural.*
12. WOLFFENSTEIN, R. *Stable Hydrogen Peroxide.*
13. TRAUTMANN. *The Significance for Europe, especially Germany, of the Plague Outbreak in Manchuria.*

2. Möllers has examined the sputum of 51 cases of pulmonary tuberculosis by means of stains and animal inoculation and cultures. Practically all of the cases were of the human type and this makes 632 cases now recorded of pulmonary tuberculosis in which human type of bacilli only were found. Thus he considers that this is another proof in favor of Koch's claim that bovine tubercle bacilli play an unimportant part in human tuberculosis.

3. Rothe reports on the findings at autopsy on children in regard to tuberculosis. As a result of his study, he considers that the respiratory tract furnishes the main source of entrance for the bacilli and not the alimentary tract, as so many claim. He finds that only 1.32% of the cases were infected with the bovine type of tubercle bacilli.

4. Jacoby describes a method for producing hyperemia of the lungs by means of a chair which can be placed in all varieties of positions for a patient. His article is illustrated with pictures showing the various positions. [C. F., JR.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 7.

FEB. 14, 1911.

1. HENKEL, M. *The Metabolic Relation between Uterus and Ovaries: A Contribution to the Treatment of Gynecologic Hemorrhages.*
2. FINKELSTEIN, H., AND MEYER, L. F. *Technic and Indications for Using Albumin Milk as a Food.*
3. FISCHER, O. *The Influence of the Appetite on the Activity of the Stomach and Its Value for Functional Gastric Diagnosis.*
4. SACHS, E. *The Question of the Prognostic Significance of the Passage of Germs into the Blood.*
5. GILBERT, W. *A Severe By-Effect of Salvarsan.*

6. SELLEI, J. *Some By-Effects of Salvarsan.*
7. GROSS, M. *Direct Lavage of the Duodenum.*
8. SOLGER, F. B. *Suggestion for a Color Scale for Determining Physiologic and Pathologic Pigmentation.*
9. EINHAUSER, R. *Treatment with Ovarian Substance.*
10. STÜHMER, A. *Typhoid Bacilli in the Cerebrospinal Fluid.*
11. LIPOWSKI. *New Drugs and Their Value in Modern Therapeutics.*
12. HUBBER, F. *Treatment of Syphilis.*
13. DESSAUER, F. *A Simplification of X-Ray Instruments.*
14. UFFENHEIMER. *Two Years of Public Supervision of Infants.* (Concluded.)

No. 8. FEB. 21, 1911.

1. MORITZ, F. *A Method of Intravenous Injection, Especially of Undefibrinated Human Blood.*
2. IVERSEN, J. *Technic of Intravenous Use of Salvarsan.*
3. BENARIO, J. *The Technic of Salvarsan Injections.*
4. *STRONG, R. P. *The Specific Treatment of Frambesia with Salvarsan.*
5. HAUDEK, M. *Radiologic Contributions to the Diagnosis of Ulcer and of Carcinoma of the Stomach.*
6. CRAMER, H. *Nature and Treatment of Osteomalacia.*
7. SCHEIDEMANTEL, E. *Clinical Experiences with Adalin, a New Bromide-Containing Sedative and Hypnotic.*
8. GLIMM, P. *The Treatment of Sciatica by Epidural Injections.*
9. THEILHABER, F. A. *Cancer Statistics of the Kingdom of Bavaria in the Year 1909.*
10. PÜRCKHAUER, R. *Defect of the Pectoral and High Shoulder.*
11. BAUM. *Cavernous Angioma of the Brain; Successful Operation.*
12. HÜTTEL. *Abnormally Long Retention of the Placenta.*
13. KAMPMANN, E. *Hair Ball in the Stomach (Gastrotomy).*
14. BARDACHEI, F. *A New Orthodiagraphic Arrangement.*
15. STRÜBE, C. *A New Sterilizer for Stomach Tubes and Catheters.*
16. BRUNS, H. *Josef Forster.*
17. PICK, F. *A Telecardiogram from the Past.*

3. Strong has treated 30 cases of frambesia with salvarsan. He concludes that the drug acts as a specific for these cases as does quinine for malaria. [G. C. S.]

No. 9. FEB. 28, 1911.

1. HEILBRONNER, K. *The Forensic Diagnosis of Epilepsy.* (To be concluded.)
2. SCHILLING, V. *The Mammalian Erythrocyte as a Complete Cell and Its Relation to the Blood Platelet.*
3. SAENGER, M. *Nervous, Respiratory and Cardiac Disabilities following Gastro-Intestinal Irritative Conditions.*
4. GERBER. *The Non-Specific Ulcerative Diseases of the Oropharynx and Salvarsan.*
5. SACK, A. *Case Contributions to Salvarsan Treatment.*
6. SPENGLER, L. *Permanent Results in the Treatment of Severe Unilateral Phthisis by Means of Artificial Pneumothorax.*
7. KOELSCH, F. *Protection of the Eyes in Glass Works.*
8. THEILHABER, A. *The Theory of the Origin of Menstruation.*
9. LEEDE. *The Question of General Gonorrheal Infections.*
10. STERN, F. *The Specific Significance of the Reaction of the Urine in Paresis with Liquor Bellostii.*
11. PHILIPPSON, A. *Argentum Colium Cyanatum as an Approved Agent Recommended for Chronic Gonorrhea.*
12. WEIL, L. *Appropriate Method of Using Mesotan.*
13. DRENKHAHN. *The Treatment of Unilateral Hare Lip Complicated by Cleft Palate.*

BERLINER KLINISCHE WOCHENSCHRIFT. No. 9.

FEB. 27, 1911.

1. FRIEDBERGER, E., AND SCHÜTER, A. *The Acute Operative Poison (Anaphylatoxin) from Tubercle Bacilli.*
2. BAERTHLEIN. *Changing Phenomena of Growth in Strains of Cholera Organisms.*
3. *PECHSTEIN, H. *The Diagnostic Value of the Glycyltryptophan Test in Gastric Carcinoma.*
4. ROSENDORFF AND UNNA. *The Differential Diagnosis and Treatment of Diabetes Insipidus.*
5. *GUTMANN, C. *The Influence of Triple Intravenous Injection of Salvarsan on the Wassermann Reaction.*
6. FALKENSTEIN. *Serologic Observations in Regard to Gout.* (To be concluded.)
7. OHLEMANN. *The Iodine Treatment of Basedow's Disease.*
8. GORDON, O. *The Albumose-Free Tuberculin Endotin and the Tuberculin Local Reaction.*
9. CRONQUIST, C. *Brief Communication on "Kleino" Capsules, a New Drug for Internal Use in the Treatment of Gonorrhea.*
10. LEWANDOWSKI, A. *New Problems in the Hygiene of Youth.*
11. POSNER, C. *The Pathology and Therapy of Hydrocele.*

3. In spite of the favorable results obtained by Neubauer and Fischer with the glycotryptophan test for gastric carcinoma, Pechstein finds that it can by no means be depended upon. Not only is the test negative in cases proved later to be carcinoma by operation or autopsy, but it is occasionally positive in cases where carcinoma is absent.

5. Gutmann advises an intravenous injection of "606" given three times with a fairly long interval between each injection. He reached this conclusion by making careful observations with the Wassermann reaction as a guide and he feels that this method of using the drug will lead to the best results. [J. L. H.]

## Obituary.

### THEODOR ESCHERICH, M.D.

DR. THEODOR ESCHERICH, who died of apoplexy on Feb. 15, at Vienna, was born at Ansbach, in Bavaria, on Nov. 29, 1857. He was the son of a physician and received his academic and medical education at the universities of Strassburg, Kiel, Berlin, Würzburg and München. In 1882 he entered the medical clinic at Würzburg, then under the direction of Dr. Karl Gerhardt. Here Escherich in time became first assistant, and subsequently served in hospitals at Paris and Vienna. Determining on pediatrics as his specialty, he published in 1886 his monograph on "The Intestinal Bacteria of the Infant and their Relations to the Physiology of Digestion." He continued till 1890 as an assistant in v. Ranke's clinic, pursuing during this time the researches which led him to the development of the volumetric system of artificial infant feeding. In 1890 he was called to succeed v. Jaksch as professor of pediatrics at the University of Graz. Here he continued his studies in infant feeding, and became interested in the serologic investigations associated with the discovery of diphtheria antitoxin by Behring. In 1894 he declined a call to succeed Heubner at Leipzig, but in 1902 accepted the professorship left vacant at Vienna by the death of Widerhofer. Here, at the St. Anna Hospital for Children, he passed his richest years of teaching, research, practice and publication. He was a contributor to numerous medical periodicals, a member of many learned societies, and was known as a pediatric consultant throughout Europe. His professional reputation was international. His energy for work was tremendous, and his disposition strenuous and masterful. He is described as impulsive, uncommonly strict,

strong-willed, faithful, severe with himself but kindly towards others. That the children, his patients, loved him, is evidence that he loved them and, therefore, had a good heart. His career is an admirable example of the life of the German university physician, scientist and professor.

## Miscellany.

### DR. CANNON AND THE ANTI-VIVISECTIONISTS.

IN the issue of the JOURNAL for March 16, we commented editorially on the recent anti-vivisection exhibit in Boston. The following letter on the same subject from Dr. W. B. Cannon to the public press on March 24 deserves reprinting in full for its efficient and authoritative exposition of some of the fallacies and misrepresentations of the anti-vivisection agitation.

"An exhibit purporting to represent the methods of animal experimentation was displayed last week in this city and was extensively noticed in some of the daily papers. A clear disclosure of the morals of organizations which claim the position of moral leadership was the real import of the exhibit. Lest this aspect be overlooked, I wish to call attention to it.

"In the center of the room was a placard on which was described the 'poisoning' of insane patients by Dr. H. J. Berkley. He was treating his patients with minimum doses of thyroid gland. 'Two patients became frenzied, and of these, one died before the excitement had subsided' — so said the placard. In the original account the sentence is completed by the words, 'the immediate cause of the exitus being acute disseminated tuberculosis.' This crafty perversion was exposed ten years ago by Dr. W. W. Keen (Jour. Am. Med. Asso., Feb. 23, 1901); no correction has yet appeared in anti-vivisection writings.

"Another placard presented statistics intended to indicate that mortality from meningitis has increased in New York City since the anti-meningitis serum was discovered. The misleading confusion, in these statistics, of epidemic meningitis, which the serum cures, with other forms, which are as yet incurable, was clearly pointed out last year by Dr. C. H. Dunn, of Boston (Life, May 5, 1910). The anti-vivisectionists have persisted in misstating the facts.

"Dogs — miserable, wasted creatures — were represented in two drawings of Pawlow's 'Scientific Torture Chamber.' Any one who has read Pawlow's classic work on the digestive glands (for which he received a Nobel prize in medicine) knows how strongly he insisted that the prime conditions for the action of these glands are freedom from distress and the satisfactions of appetite. The drawings in the anti-vivisection exhibit represented the animals quite falsely, as is readily proved by photographs of the dogs and the testimony of persons who have visited Pawlow's laboratory.

"A large painting hung on the wall pictured a medical lecture. 'Now, gentlemen,' the professor remarks, 'having shown the extreme sensitiveness of these organs, I will perform some amusing experiments with the brain and the nerves of the eye to-morrow morning, provided, of course that the animal is still alive.' As publicly stated last year (North American Review, June, 1910), medical schools throughout the entire country have adopted humane regulations safeguarding against pain and discomfort the animals used for experimental purposes. Both the picture and the words attributed to the professor are a wicked travesty of the truth.

"Disposed on tables were pamphlets and leaflets which visitors were urged to take. These circulars contain garbled statements, misleading quotations, and reiterated falsehoods, the character of which has been often pointed out. (See 'Some Characteristics of Anti-Vivisection Literature,' published by the American Medical Association.) Several of the circulars report opinions of medical men in opposition to vivisection. Sir Charles Bell is quoted — he died in 1842. Dr. John Elliotson, a mesmerist, is quoted — he was born in 1791. Dr. Charles Clay, 'collector of fossils,' was born in 1801. Dr. Garth Wilkinson, poet and mystic, born ninety-nine years ago, held an honorary M.D. degree. In the antivivisection circulars no reference is made to the lifetime of these physicians — an important consideration when we remember that the experimental method has been used in medicine mainly since ether anesthesia was discovered (1846), and that the greatest triumphs have come since 1880. Among the living physicians, Sir Frederick Treves is quoted; nine years have passed since he first complained (London *Times*, April 18, 1902) of the adroit misuse of his remarks by the anti-vivisectionists — but of what avail! Dr. Arabella Kenealy, who is hostile, sets herself down in 'Who's Who' as a novelist. Dr. W. Gordon-Stables describes himself as professional writer and author of one hundred and thirty-six books with serial novels. Dr. E. Berdoe (74) reports himself as a writer, author of many volumes on Browning; Dr. Josiah Oldfield is a fruitarian lawyer; Dr. J. D. Buck (72), a theosophical propagandist and writer on theosophy; Dr. Stephen Townsend, a novelist and actor on the stage for years, playing prominent rôles in 'Sowing the Wind,' 'Slaves of the Ring,' 'Black Tulip' and other plays. Most of these 'doctors' are quoted as 'men of greatest eminence among the vast number of physicians and surgeons who have opposed vivisection'!

"The description of experiments on animals, with no reference whatever to the motives for experimentation, or to the precautions against infliction of pain, or to the beneficent results of medical research, must lead otherwise uninformed persons to the conclusion that the men engaged in advancing medicine are moral perverts delighting in agony and blood. No more cruel treatment of high-minded men was ever devised than that.

"The instances of deception which I have mentioned should be regarded merely as examples; many more of like nature could be mentioned. Enough has been stated, however, to show that the anti-vivisectionists have been exhibiting themselves and their methods rather than the procedures of the laboratories. Their persistent appeals, through deceit and innuendo, to the finest feelings in man, for the purpose of rousing hostility towards studies immeasurably important to human welfare, is a matter of serious concern. If medical investigation is not to be severely hampered in this country, such attempts as the anti-vivisectionists have made to misrepresent laboratory methods and to appeal to ignorance and passion must not pass unheeded."

Dr. Cannon is a member of the committee of the American Medical Association on the restriction of animal experimentation, and his statements are those of an expert who has made a special study of the problem in the defense of legitimate medical research against legislative encroachment and the interference of misguided enthusiasts.

## FATALITIES FROM PLAGUE IN THE ORIENT.

REPORTS from various sources during the past week indicate a continued decrease in the Oriental epidemic of bubonic plague. More authentic data are now at hand regarding the actual number of fatalities from the disease. Report from the British India Office at London states that during the month of February there were 88,498 deaths of plague in India. A report by the United States consul at Harbin estimates that one fifth of the entire population of northern Manchuria has perished. There are said to have been 3,402 deaths at Fuchiatien and 831 in Harbin. Three hundred Chinese and eighteen European physicians are reported to have died. Intelligence from China by way of Seattle, Wash., states that there have been over 2,300 deaths from plague in and about Chang Chuen during the past three weeks. Report is said to have been received on March 16, at Washington, D. C., from the United States consul at Port au Spain, Trinidad, that a single case of the disease has recently occurred in that island. Report from Pekin announces that the International Plague Conference will assemble on April 3 at Mukden for a fortnight's session. Dr. Strong will be the United States representative at this conference, Dr. Brocquet the French delegate, and Drs. Farrar and Petrie the representatives from England.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MARCH 18, 1911.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | 1,534 | 508 | Waltham | 12 | 0 |
| Chicago | 696 | 190 | Brookline | 9 | 1 |
| Philadelphia | — | — | Chicopee | 7 | 2 |
| St. Louis | — | — | Gloucester | 10 | 2 |
| Baltimore | — | — | Medford | 8 | 1 |
| Cleveland | — | — | North Adams | 6 | 4 |
| Buffalo | — | — | Northampton | 13 | 1 |
| Pittsburg | — | — | Beverly | 6 | 1 |
| Cincinnati | — | — | Revere | 2 | — |
| Milwaukee | — | — | Leominster | 2 | — |
| Washington | — | — | Attleboro | 3 | 1 |
| Providence | — | — | Westfield | 8 | 3 |
| Boston | 275 | 70 | Peabody | — | — |
| Worcester | 59 | 16 | Melrose | — | — |
| Fall River | 57 | 20 | Hyde Park | 4 | 1 |
| Lowell | 31 | 12 | Woburn | 5 | 1 |
| Cambridge | 32 | 4 | Newburyport | 4 | — |
| New Bedford | 42 | 15 | Gardner | 5 | 1 |
| Lynn | 25 | 4 | Marlboro | 5 | 2 |
| Springfield | 29 | 8 | Clinton | 2 | 1 |
| Lawrence | 23 | 8 | Milford | — | — |
| Somerville | 26 | 11 | Adams | 0 | — |
| Holyoke | 17 | 4 | Framingham | 4 | 1 |
| Brockton | 15 | 6 | Weymouth | 5 | — |
| Malden | 16 | 4 | Watertown | 3 | 0 |
| Haverhill | 16 | 2 | Southbridge | 4 | 0 |
| Salem | 16 | 5 | Plymouth | — | — |
| Newton | 11 | 1 | Webster | 2 | 2 |
| Fitchburg | — | — | Methuen | — | — |
| Taunton | 12 | 2 | Wakefield | 1 | — |
| Everett | 5 | 1 | Arlington | 2 | — |
| Quincy | — | — | Greenfield | 6 | — |
| Chelsea | 13 | 2 | Winthrop | 0 | — |
| Pittsfield | 8 | 1 | | | |

## SOCIETY NOTICE.

AMERICAN GASTRO-ENTEROLOGICAL ASSOCIATION. — The fourteenth annual meeting of this society will be held at the Bellevue-Stratford, Philadelphia, April 19 and 20, 1911.

## RECENT DEATHS.

ANNE SOPHIA KENNEY PATCH-LINDQUIST, M.D., M.M.S.S., died in Boston, March 18, 1911, aged forty-seven years. Dr. Lindquist was born at Milton, N. H. She received the degree of M.D. from Tufts in 1896, and had practiced medicine in Boston since that time. She is survived by her husband and by one son.

DR. EDWARD WALTER BRANIGAN, who died of heart disease on March 23 in Cambridge, Mass., was born at Salem, Mass., in 1858. After a preliminary education in the public schools of that city, he went to California, where he was for several years engaged in newspaper work. Returning to Boston in 1878, he began the study of dentistry, and in 1882 graduated from the Boston Dental School. Since that time he had practiced his profession in Boston. For some years he had been professor of clinical dentistry at the Tufts Dental School, and for the past few months its acting dean. He was a trustee of the Forsyth Dental Infirmary, and had been actively interested in preparing the plans for its projected building. He was a member and former president of the National Association of Dental Faculties, and a member of the Massachusetts Dental Society. He is survived by one son, a practicing dentist at Groton, Mass.

DR. EDWARD FISKE ASHLEY, one of the bacteriologists at the Quarantine Hospital, New York, died at the post of duty, on March 21, from malignant cerebrospinal fever. He had performed the autopsies in fatal cases of this disease from the steamship *Martha Washington*, and also made bacteriological tests in the laboratory with specimens from living patients. The Flexner serum was promptly resorted to, but he died on the third day of the attack. Dr. Ashley, who was from Waterbury, Conn., was graduated from the Yale Medical School in 1900. He had been in Dr. Doty's laboratory service only during the past year.

DR. RAYMOND W. BROWN, house physician of the Hudson Street Hospital, New York, died on March 24, from cerebrospinal fever, after an illness of only eighteen hours. It is stated that he had recently treated some Greek immigrants and that it was probably from one of these that he contracted the disease. In his case, like that of Dr. E. F. Ashley, the Flexner serum proved unavailing. Dr. Brown was a native of Cobleskill, N. Y., and was graduated from the medical department of the University of Pennsylvania in 1908. Before entering the Hudson Street Hospital service he was an interne at the Nursery and Child's Hospital, New York.

DR. JAMES WILLIAM DODD HANCOCK, of Brooklyn, N. Y., died on March 22, from injuries received in an automobile accident five days previously. He was a native of New York City and forty years of age and was graduated from the Long Island College Hospital, Brooklyn, in 1896. At the time of his death he was associate attending surgeon to the Williamsburgh Hospital, Ear, Nose and Throat Department.

## BOOKS AND PAMPHLETS RECEIVED.

Report of the Commission to Investigate the Question of the Increase of Criminals, Mental Defectives, Epileptics and Degenerates. January, 1911.

Das Radium in der Biologie und Medizin von Prof. E. S. London. Leipzig, 1911.

Prevention of Hemorrhage in Pulmonary Tuberculosis by the Administration of Autogenous Vaccines. By Roswell T. Pettit, B.S. Ottawa, Ill. Reprint.

Examination of Prof. Irving Fisher's Report on National Vitality. By Lawrence Irwell. Reprint.

The Modern Materia Medica. Second edition. The Druggist's Circular. New York, 1910.

Diseases of the Eye. By Dr. Curt Adam. New York: Rebman Co.

Atlas of Microscopic Diagnosis in Gynecology. By Dr. Rudolph Jolly. New York, N. Y.: Rebman Co.

Tuberculose oculaire et serum anti-tuberculeux du docteur Marmorek par le docteur Arnold E. Verrey. Reprint.

Differential Diagnosis of Alcoholic Coma from Other Forms of Coma, with Especial Reference to the Care of Unknown Persons Found by the Police on the Streets in a Comatose or Semi-Comatose Condition. By Lewis D. Mason, M.D. Reprint.

Transactions of the American Surgical Association. Vol. 28. Archibald MacLaren, M.D., editor. 1910.

Golden Rules of Diagnosis and Treatment of Disease. By Henry A. Cables, B.S., M.D. C. V. Mosby Co. 1911.

Transactions of the American Urological Association. Ninth annual meeting at St. Louis, Mo., June 6 and 7, 1910.

## Original Articles.

# SOME OBSERVATIONS ON THE DISORDERS OF THE STOMACH AND DUODENUM WITH ESPECIAL REFERENCE TO ULCERS.*

BY WILLIAM J. MAYO, M.D., ROCHESTER, MINN.

In deriving the name "abdomen" from the Latin word *abdere*, meaning to conceal, an early ancestor had a most prophetic vision. The history of disorders of the abdomen is a compilation of strange hypotheses, curious fancies, and absurd statements; indicating a woeful lack of knowledge, and that concealment of its true pathology was fairly complete.

Until surgery came to our aid, we had no means of directly inspecting the abdominal contents during life, and this led to too great dependence upon clinical data derived from indirect methods of examination, and the result of post-mortem investigations. But since we have been able, through surgical means, to bring the abdominal organs and their diseases to the light of day for examination, order has come out of chaos and facts have replaced supposition and imagination.

Ocular inspection has always been necessary to dispel mysteries and develop the truth. The eye, or the eye aided by the lens and the microscope, brings out facts which would otherwise remain in obscurity.

The post-mortem has permitted such direct inspection; but not in the living body, or under normal conditions. The post-mortem showed the condition which caused death, but in chronic disease this was seldom the pathologic condition which existed during life and which gave rise to the symptoms, but rather the result of terminal infections and secondary complications which so obscured the original disease that it paled into insignificance and was lost sight of in the gross pathology immediately present.

No truer remark has ever been made in this connection than "Few people with chronic disease die from the disease which was present during life."

Post-mortem pathology replaced with solid facts the preceding era of clinical observation. It is the foundation of medicine and it introduced a school of medicine which for the first time could be called scientific. During this magnificent period of pathologic research some of the greatest discoveries of modern medicine have been made. This period has given us the name of Virchow, Koch and a host of workers in minute pathology and the microbic origin of disease. The name of Reginald Fitz will be remembered long after the rest of us are forgotten for his three remarkable contributions to the pathology of the abdomen, i. e., Meckel's and other diverticula, the appendix and the pancreas.

We are now opening out into a new era, that of physiological research and the study of diseased processes in the living, during the curable stage of the disease.

The pathologic era led to pessimism in medicine because it dealt with terminal conditions, just as the preceding period of clinical observation led to empiricism in medicine and left behind it a legacy of "pathies" and "isms" which still exist.

Direct inspection has led to great discoveries in other fields, such as the urinary bladder. The cystoscope, ureteral catheter and the x-ray have developed the pathology of this viscus to a remarkable degree, and its story, therefore, has necessarily been rewritten.

During the transition period the bladder was supposed to be diseased with extraordinary frequency. It is now known to be the least often diseased of any organ of its size and importance in the abdomen.

Primary tuberculosis of the bladder is one of the rarest pathologic conditions. In 99% of women and 86% of men, tuberculosis of the bladder is secondary to tuberculosis of the kidney, and the remaining 14% in men are due to tuberculous disease of the epididymis, vas deferens, seminal vesicles and prostate, yet the symptoms are those of intractible cystitis for which the bladder has been diligently and unavailingly treated for years.

The male bladder was supposed to be diseased more frequently than that of the female, because of some peculiar predisposition which it had to disease; but we now know that it was not "predisposition," but the result of prostatic hypertrophy, posterior urethritis and diseases of the seminal vesicles, to which the male bladder owed this marked liability.

Unfortunately, the gastroscope has no such record of achievement as the cystoscope, and ocular inspection through the abdominal incision has been necessary to obtain exact knowledge of the pathology of the stomach. Like the urinary bladder, the stomach is rarely diseased of itself, although giving rise to more complaints, and, I may say, receiving more unnecessary treatment, than any other organ in the body. Clinical observation had availed but little and the post-mortem, with few exceptions, had failed to establish the pathology of the living.

Through direct operative inspection, Tait[1] exploded the clinical theory of pelvic cellulitis, showing that the symptoms were due to suppurative salpingitis; and he also demonstrated that so-called "broad ligament hematoceles" were, in truth, extra-uterine pregnancies.

A great number of supposititious diseases in the abdomen have been shown, by operative inspection, to be the result of appendiceal infections, and gallstones have been shown not "innocent." In the same way the accumulated rubbish of supposititious diseases of the stomach has gone to the scientific garbage can, as surgical examinations have worked from the lower to the upper abdomen.

The functions of the stomach may be divided into two groups, — the mechanical and the chemical. Of these the mechanical is by far the most important, any interference in the way of ob-

* Read before the Section on Surgery, Boston Medical Library Association, Jan. 18, 1911.

struction to the onward progress of food promptly giving rise to symptoms. Changed chemical conditions which follow partial gastrectomy, or which follow gastrojejunostomy where the gastric secretions are seriously interfered with, apparently do not give rise to serious difficulty so far as the health and comfort of the patient is concerned; and the attempt to built up a pathology for the stomach based upon chemical analyses of the gastric secretions has proved a lamentable failure.

Pawlow [2] and Starling [3] have shown that gastric secretions are readily changed by the character of the food, and not only is this true, but in many non-gastric disorders the secretions of the stomach are changed and a large number of general diseases exhibit gastric phenomena of such severity as to overshadow for a time the originating disease.

I am sure that in times gone by all physicians have treated the stomach because of aggravated gastric distress which depended upon cardiac or renal insufficiency. Gastric symptoms sometimes antedate the usual signs of pulmonary tuberculosis. Arterioesclerosis is commonly attended by gastric disturbances; a high percentage of the cases of pernicious anemia are believed to be the result of some stomach disease and quite often, on account of the lack of acids, thought to be cancer.

Diseases of the nervous system often give rise to marked gastric distress, and every year we see a few cases of unavailing surgical decorations on the abdomen for the gastric crises of tabes.

Eliminate from the stomach all of the complaints which are the result of general diseases, and we eliminate about one third of all the serious gastric disturbances which one is called upon to treat, and for which, through lack of true knowledge, treatment has been freely offered in the past.

The three closely associated conditions, — atonic dilatation, gastroptosis and gastric neurosis, — give rise to much gastric distress. However, the stomach is not the offender, but rather are the symptoms due to an unstable nervous system and to congenital physical defects. Admitting that food leaving the stomach is delayed in atonic dilatation, the delay does not depend upon mechanical obstruction. The prolapsed stomach is often shown, by bismuth and x-ray, to be more nearly pelvic than upper abdominal in location, yet the gastroptosis is usually a part of a general enteroptosis and does not give rise to mechanical conditions so far as the progress of food is concerned.

Among the protean manifestations of neurasthenia, stomach complaint is the most common. This group of cases has given rise to many fads in medicine. Eminent gentlemen have asserted that no case of gastric ulcer should be operated upon until the patient had had his eyestrain corrected. Authorities stated that gastric ulcer was more common in women than in men, and that distress in ulcer followed at once upon eating. Osteopathy, Christian Science, walking barefoot through the grass, Lydia Pinkham's remedies, and Pierce's, as well as our own favorite prescriptions, and that time-honored fake, that loaded-dice and shell-game of the medical profession, "electricity," all achieved about the same results in the treatment of these conditions.

Then surgery entered the field with enthusiasm. Some of these poor patients had gastrojejunostomy and other stomach operations performed for supposititious ulcers, much to the discontent of the patient, the physician and the surgeon; and in the records of these cases "failure of operation to cure the ulcer" was put down when it should have been recorded, "unnecessary surgical interference."

When we eliminate atonic dilatation, prolapse of the stomach, gastric neurosis, etc., another one third of stomach complaints have been disposed of. To treat these patients successfully we would have to begin four generations back; and even medicine has its limitations.

The control of the pyloric apparatus is not vested in the stomach itself, but in the duodenum, and, under certain circumstances, in the derivatives of the midgut. This has been shown by Cannon,[4] Pawlow, and Starling. In experimental gunshot wounds through the intestine, the pylorus will close automatically for a number of hours; an attempt on Nature's part to prevent food from coming down into the injured area.

In acute appendicitis, we have nausea, vomiting and pain all over the abdomen some hours before there are localized symptoms in the region of the appendix; just as in strangulated hernia, nausea and vomiting and symptoms of acute indigestion precede local evidence of the disease at the hernial site.

In some cases of chronic appendicitis (especially those appendices which contain fecal stones); in tuberculosis of the ileocecal coil, intestinal tumor, chronic intussusception, gallstone disease, etc., marked disturbances of the stomach are sometimes the chief or only symptoms of the disease. These patients go on for years, complaining and receiving treatment for indigestion and dyspepsia, although the stomach is merely acting as a mouthpiece to call attention to the disturbance. Treating the stomach under such circumstances is about as sensible as it would be to deluge with water a fire-alarm box because it was indicating the presence of fire in some other locality.

Maintenance of the body is a primitive function and it existed before there was a nervous system. The control of the primitive intestinal tract is dependent upon chemistry, "internal secretions," which Starling calls "hormones." These internal secretions are correlated through the blood stream and the sympathetic nervous system upon which the internal secretions act. Organs of more powerful internal secretions, such as the adrenals and the hypophysis, are structurally associated with the sympathetic nervous system like the mechanical piano-player, where the "player" is built inside the piano itself instead of being an attachment.

The fundus of the stomach was a much later addition, coming after the cerebrospinal nervous system had developed; it is, therefore, more or less under conscious control. The stomach is endowed with storage function for the convenience of rapidly placing into it a quantity of material for the slower work of digestion and assimilation, — work which must be done by the organs that have their control in the internal secretions and which compose the territory between the beginning of the antrum of the stomach and the splenic flexure of the colon.

Disturbance in the assimilative tract brings about a closure of the pylorus called "pylorospasm," which delays the food from leaving the stomach; the result is indigestion, dyspepsia and gastric distress. We have no conscious knowledge of the organs directly involved except as we receive it through the stomach, just as we have no conscious knowledge of the kidney function except as we receive it through the urinary bladder. And herein lies the explanation of the stomach complaints, of gallstones, appendicitis and other diseases of the intestinal tract.

Eliminate all of the disorders of the stomach which arise from diseases of the digestive tract outside the stomach, and we will eliminate about 20% or more of the so-called "gastric diseases" and come down to a meager 10% in which there is actual demonstrable disease. I believe that we are well within the truth in saying that 90% of supposed diseases of the stomach are not entities, but rather groups of symptoms masquerading as diseases, and named accordingly.

This lengthy preamble seems almost out of place in a discussion of ulcer of the stomach and duodenum, but it has been made necessary by the misconceptions and errors which only of late have been brought to light under direct inspection of diseases of the stomach in the living.

Twenty-five years ago we were taught that simple peptic ulcer was a disease of the stomach more common in women, and that it was usually multiple. It was supposed that the duodenum was very rarely affected. Later investigation has shown that the ulcers referred to were a form of acute ulcer and that they were especially frequent in the overworked, underfed and badly nourished female. Modern social conditions have, however, changed greatly for the better, and this type of acute ulcer, with a high percentage of mortality so familiar to the older pathologist, is now rarely seen.

Acute ulcers are usually toxic, and the patient either dies or recovers within two or three weeks; they are often multiple, sometimes with a large number of perforations at one time. Bordon[5] demonstrated that acute ulcers of this type could be produced experimentally by making an extract of the stomach scrapings of a normal guinea-pig's stomach and injecting it into the normal rabbit. In a very beautiful piece of work he showed that these ulcerations were due to self-digestion; the gastrotoxic extract had in some way taken away from the stomach of the second animal the ability to protect itself against auto-digestion. He could prevent this action by keeping an alkaline solution in sufficient quantity in the stomach to neutralise the gastric juice. Turck[6] showed that, by feeding animals a large quantity of filth and colon bacteria, he could produce multiple acute ulcers in the experimented animal.

In this manner we can explain the acute multiple ulcers of the chlorotic female, and the hemorrhagic erosions which cause severe hemorrhage in cirrhosis of the liver and some blood diseases. But neither experimentally nor clinically have these acute ulcers been found to be responsible for the chronic calloused ulcer of the stomach and duodenum.

The whole question of chronic calloused ulcer must be reconsidered. Up to the present time the statistics of John Brinton,[7] which were compiled in the early sixties, and those of Welch,[8] compiled in 1885, have been accepted as definitely establishing certain facts. The work done by these two men is a splendid example of pathologic research, and a model of their time. The actual pathologic examinations upon which these statistics were based, however, were not made by these eminent authorities, but were merely compiled by them. Welch's statistics covered the findings from the autopsy material from ten large German clinics during a still earlier period some years prior to the publication of the paper. These statistics represented what was well known at that time, but by no stretch of imagination can we consider them as representing the knowledge of to-day any more than we can settle other mooted questions in medical progress by data accumulated twenty-five to sixty years ago. For example, since the compilation of these two monographs, the facts as regards the germ origin of disease have been discovered, and, in truth, the whole aspect of medical science has changed.

Actual inspection through exploratory incision shows conclusively that both duodenal and gastric ulcers are more often found in the male sex, that chronic duodenal ulcer is more common than gastric, and, in the large majority of cases, only a single ulcer is present.

For purposes of comparison we have taken 1,000 cases operated upon at St. Mary's Hospital for gastric and duodenal ulcers, which includes all of the cases operated upon up to Jan. 17, 1911. Of these, 745, or 74½%, were males, and 255, or 25½%, were females.

Previous to June 1, 1906, the differentiation between gastric and duodenal ulcers was not well established and many ulcers which were duodenal in origin, but which extended up to the pylorus, were supposed to be gastric. However, since June 1, 1906, 621 authentic cases of gastric and duodenal ulcers have been operated upon (Jan. 17, 1911), of which 201 (32½%) were gastric and 401 (64½%) were duodenal, and 19 (3%) had one or more ulcers of both the stomach and duodenum. Including all the types of operations, — resections, excisions, gastrojejunostomies, etc., — there was an operative mortality of 15, 2½%. The mortality figures include all the cases operated

upon who died in the hospital without regard to cause of death or length of time after operation.

The terminal three fourths of an inch of the pyloric end of the stomach, known as the "pyloric canal of Jonnesco," [9] is a part of the pyloric apparatus. It is usually closed and is not subjected to the traumatism nor is it exposed to the action of the gastric secretions to the same extent as the pyloric antrum. It follows, therefore, that pyloric ulcers are rare. A differential diagnosis between duodenal and pyloric ulcers may be difficult, but if the pyloric vein [10] be sought, the relation of the ulcer to the pylorus will be readily ascertained. In this connection I would say that traction made upon the upper duodenum in drawing it up into view will sometimes produce temporary avascularization just below the pylorus, and the small bleached spot, the "anemic spot," [11] may be mistaken for ulcer.

More than 90% of ulcers of the stomach are situated along the lesser curvature. The ulceration is sometimes more extensive on the posterior wall, less often on the anterior wall. The induration often extends from the ulcer downward upon the anterior and posterior walls like saddle-bags and, therefore, is termed "saddle ulcer." [12]

Ulcers not along the lesser curvature are more frequent on the posterior than the anterior wall of the stomach. While the induration may be very considerable in extent, the rule is that the actual ulcer is not larger than the end of a slate pencil to that of a nickel, averaging about the size of the end of a lead pencil. Most ulcers which are larger than a silver twenty-five-cent piece are undergoing malignant degeneration. At operation the surgeon may be inclined to believe, on account of the induration and extent of scar tissue, that the size of the ulcer is much greater than it is. It is rather amusing to see in bismuth and x-ray plates supposed to show ulcers of the stomach and duodenum, shadows of a size and character never seen in the living subject.

Less than 6% of the ulcers which we see are multiple, although there is sometimes an erosion on the opposite wall to the ulcer representing the point of contact, which we call "contact ulcer." [13]

Ulcers both of the stomach and duodenum often perforate, but these perforations are rarely into the free peritoneal cavity. In our entire series we have only had thirty-one such cases, while nearly one third had undergone chronic perforation, protected by adhesions to the neighboring organs. The posterior wall of the stomach, the lesser curvature and the duodenum are especially favorable in this respect, in that they are in close proximity to neighboring structures. Free perforation usually takes place along the anterior wall where there is less protection. Subacute perforation with formation of secondary abscesses, subdiaphragmatic or otherwise, are the results of escaping fluids from a perforating ulcer which has been imperfectly closed by advance adhesions.

The larger number of acute perforations are perforations through chronic ulcers. The fluids gravitate downward, and in duodenal ulcer a considerable percentage of our earlier cases upon which we operated were done with the pre-operative diagnosis of perforated appendix. The condition of the appendix did not justify this conclusion, and led to further search until the cause was found in the duodenum.

The diagnosis of gastric and duodenal ulcers is usually not difficult, and the differential diagnosis between a gastric and a duodenal ulcer can usually be established, but it cannot always be done, nor is it essential that it should be. The duodenum above the common duct is a part of the stomach and not a part of the small intestine. It is derived from the primitive foregut, the same as the stomach. Its mucous membrane is thin and granular, it has no valvulæ conniventes and is entirely unlike the small intestine. Apparently it is a vestibule to the small intestinal area, and its embryology, its function and its diseases are those of the stomach. I believe that it would not be far out of the way if we classified it as part of the stomach, dividing the stomach into the fundus, antrum, pyloric canal and proximal duodenum.

In the early stages of gastric and duodenal ulcer, hyperacidity and hypersecretion are prominent features, and the pain is usually in the "pit" of the stomach. In some cases of duodenal ulcer the pain passes to the right, and in some gastric ulcers to the left. The location of the pain, however, is often misleading in this respect. Hyperacidity is often not as well marked in gastric ulcer as in duodenal ulcer, and, generally speaking, in both gastric and duodenal ulcers hypersecretion is more persistent than hyperacidity. The pain in duodenal and gastric ulcers in the vicinity of the pylorus usually comes on from one to three hours after meals. In gastric ulcers of the body of the stomach, the pain comes on earlier following the meal, and while duodenal and antral ulcers are almost regularly relieved by taking food, in ulcers of the body of the stomach, food sometimes gives rise to pain. The belching up of sour fluids from the empty stomach has a very deleterious effect upon the teeth, and often these patients will have the incisor teeth of the upper jaw dissolved away nearly to the gum. Hunger pain and food relief are very typical of ulcer. The patient who goes to bed at night with a glass of milk and a cookie or soda-water, because he expects to wake up in the night with a peculiar gnawing pain in the stomach, sometimes raising up a mouthful of bitter, sour, burning fluid, will almost regularly be found to have ulcer and usually ulcer of the duodenum. It is curious to note in some cases the regularity with which the pain appears in the night. For months at a time it comes on at almost identically the same hour.

As to hemorrhage: Not over 30% of our cases give a clear history of hemorrhage, although by asking leading questions regarding black stools, etc., nearly 70% of histories of hemorrhage can be procured. Many of them, however, leave a

lingering doubt in one's mind as to their validity. Of all the prominent signs and symptoms of ulcer, hemorrhage is the least valuable, and unless the hemorrhage is preceded and followed by the usual evidences of ulcer, it is probably not due to chronic ulcer, but belongs to that queer group of toxic erosions which I have already mentioned. If there is doubt in our minds as to the cause of hemorrhage which we see coming from the stomach, what must our attitude be toward the so-called "occult blood" in the stool. If found, it is merely up to us to guess where it came from. If it is corroborated by other evidences of a substantial nature, it has value, but of itself it means little.

It is always advisable to examine the gross specimen brought up by the stomach tube from the fasting stomach. The yellowish, sour, pungent fluids, the result of hypersecretion and hyperacidity, are in marked contrast to the dirty, sickish, coffee-ground material so often found in cancer.

Laboratory diagnoses based upon the analyses of the gastric contents are valuable but they are not the controlling factors in the diagnosis and must be corroborated by other signs and symptoms.

In the later stages of the disease, obstruction supervenes, and the finding of food remnants eight to ten or twelve hours after meals, or the habitual use of the stomach tube to remove these undigested particles, is not only most important in diagnosis, but, I believe, furnishes a surgical indication which should not be ignored.

Gastric and duodenal ulcers may exist for years. The disease usually begins in the young adult who develops a history of stomach trouble marked by bitter, sour, acid belching and regurgitation coming on from one to three hours after meals and relieved by taking food. With or without treatment the symptoms will abate and, in the early history, will disappear for months or years at a time, leading to the delusion that the ulcer is cured. These "spells" recur at closer and closer intervals until, in the later stages, obstruction supervenes and, as the acids then diminish and blood is sometimes present, the patient is thought to have cancer and he will turn his face to the wall, fairly content to die in order to escape his punishment.

Every year we operate upon a number of patients with obstruction who are in a most advanced state of emaciation and malnutrition due to simple ulcer, but supposed to have malignant disease. The average duration of symptoms in the cases we have operated upon has been twelve years, seven months and some odd days. Certainly this does not appear to be a hasty resort to operative treatment.

*Surgical treatment of gastric and duodenal ulcer.* When shall we operate upon gastric and duodenal ulcer? I used to say "after nine complete and permanent medical cures." Do the chronic calloused ulcers get well under medical treatment? I do not know. However, we have operated upon a great number of cases when the symptoms were in abeyance and it might be thought that the patient was cured, but I have never seen one in which there was definite closure of the ulcer. It is the old story of appendicitis and gallstones over again. The symptoms are intermittent, but the cause remains until it is removed.

As to acute ulcer and the early stages of other ulcers: It is entirely probable that definite healing takes place, and personally I have no doubt that a very high percentage of the cases recover without operation, but I have very grave doubts as to the permanent, spontaneous cure of *chronic* calloused ulcer. In the large majority of cases, if such cure could be brought about, the cicatrix produced in healing would result in obstructive phenomona and the later stage would be worse than the first.

It is in these cases of old chronic obstruction, in which the obstruction has eliminated the hyperacidity and, for that matter, nearly abolished the functions of the stomach, that I have seen the closest resemblance to definite healing.

Posterior gastrojejunostomy is efficient in duodenal ulcer. Occasionally a duodenal ulcer can be excised, or the excision of such an ulcer, combined with pyloroplasty, or the Finney operation,[14] is possible. The ulcer can usually be enfolded as recommended by Moynihan,[15] using two or three mattress sutures of linen. As to gastric ulcers, I believe that they should always be excised if possible. Wilson and MacCarty[16] found that 71% of over 300 of our resections of the stomach for cancer showed that the cancer had begun in ulcer, a conclusive opinion which can only be derived from surgical specimens during the curable period. An opinion based upon post-mortem findings would, of course, be quite valueless on account of the extent of the disease.

Keen[17] and Bloodgood[18] state that no case of carcinoma of the skin has been reported which did not begin in some pre-existing lesion, e. g., moles, warts, heat or sun irritation, syphilitic or tuberculous lesions, or the result of chemicals, traumatism, etc. We are just beginning to find out that carcinoma of the internal epithelial surfaces of the body presents the same condition of pre-cancerous lesions, of which ulcer of the stomach is one.

In excising an ulcer of the stomach, gastrojejunostomy is usually necessary in addition because the interference with gastric motility may be sufficient to prevent a complete cure of the patient.

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## DUODENAL ULCER.*

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I AM glad to have the opportunity to say something about duodenal ulcer, for I consider it a "coming disease," something like appendicitis twenty or thirty years ago. The diagnosis will be more frequently made and the condition will be better treated.

Much new information about chronic duodenal ulcer has accumulated in the last few years as a result of the activity of surgeons, especially the Mayos, Moynihan, Robson, Deaver, Codman and Hall, and we must revise many of our ideas about the frequency, the pathology, the diagnosis and the treatment of this condition. We emphasize recent surgical statistics because the diagnosis is verified by operation, and shall take up the new things the surgeons have told us rather than attempt any complete review of the subject.

We must remember that earlier statistics about gastric as contrasted with duodenal ulcer have relatively little value because the cases were not properly separated. We must also remember that the surgeons in the past have seen only the severest cases and that surgical statistics deal wholly with *chronic* ulcer.

In looking over reports we must remember that the artificial distribution of ulcer and ulcer-like cases in our large hospitals is responsible for some confusion of ideas about the class as a whole. In the medical dispensary we find the simple hyperacidities; in the medical wards, a group of ulcer cases, largely acute, such as Greenough and Joslin reported ten years ago, 80% women, at the age of twenty-five, four fifths of whom had vomited blood; and in the surgical wards the severe chronic ulcer cases, two thirds or three fourths men, the perforations, pyloric obstructions, etc. No single group represents the whole field.

To avoid confusion, we shall say little about cases with marked pyloric obstruction, which have a distinct set of signs and symptoms. We need a clear picture of the earlier symptoms in simple duodenal ulcer to aid us in making an earlier diagnosis before serious complications occur.

*Frequency.* — It is evidently not a rare disease, but, like appendicitis in the early days, many cases are seen and not recognized. The proportion of duodenal to gastric ulcers is evidently far greater than was formerly supposed. The old ratio of 1 to 12 will have to be revised.

The number of duodenal ulcers is so great in recent reports that we are tempted to ask if the pylorus has not moved. The secret is that many have been overlooked in past years, or confused with other lesions. The classical cases of duodenal ulcer with severe pain late after meals and gross blood in the stools are only a small per cent of the whole. Many are entirely latent or have perforation for the first symptom. Many perforating cases are confused with appendicitis before operation, and some afterwards; many are confused with gastric ulcer, not only in the office, but in the operating room, or even at post mortem. It is estimated that probably one half the ulcers called gastric are really duodenal. Many are confused with gastric neuroses, especially hyperacidity.

Even autopsy statistics of duodenal ulcer are changing from the meager 2 to 3% of all peptic ulcers to much larger figures. In 50 cases of peptic ulcers autopsied at the Boston City Hospital, 16, or 34%, are classed as duodenal. Codman has shown that the duodenal ulcer may heal entirely without gross scar, which may explain why post-mortem statistics are behind operative statistics in frequency.

Modern surgery shows a steady increase in the proportion of duodenal ulcers at operation. In 1904 the peptic ulcers operated by the Mayos were 73% gastric and 27% duodenal; in 1907, 31% gastric and 61% duodenal, 8% both gastric and duodenal. Instead of the old ratio of 12 gastric to 1 duodenal ulcer, we have the modern operative ratio of 2 duodenal to 1 gastric ulcer. This ratio seems established for the type of chronic severe peptic ulcers which go to the surgeon, but does not *necessarily* hold good for the total number of both mild and severe peptic ulcers.

More than three fourths of duodenal ulcers are in men; this seems to be equally true of *chronic* gastric ulcer.

*Etiology.* — We get nothing new here from the surgical reports except Codman's suggestion that chronic narrowing of the duodenum by pressure of the root of the mesentery may delay the digestive fluids too long in the duodenum and thus favor ulcer.

Past reports of peptic ulcers have seemed to show that high acidity of the gastric juice is common or usual. More recently we have concluded that in *gastric* ulcers high acidity is inconstant, but present in about one half the cases. In Moynihan's long series of *duodenal* ulcers, verified by operation, high acidity was present in only a small minority of the cases.

*Pathology.* — Most duodenal ulcers are close to the pylorus in the folds of membrane like a fissure in ano, usually on the anterior wall, or may encircle the gut. In some there is little thickening, but Moynihan says that chronic ulcers which have caused symptoms are always demonstrable. They may become chronic because they are close to the pylorus, whose constant opening and closing prevent healing. We often find a single round ulcer 1 or 2 cm. in diameter, or two or three in a circle, or a narrow, girdling ulcer. In 10 to 20% of the cases they are multiple. In the majority there are no adhesions. In 47 out of Moynihan's 186 cases, namely, 25%,

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gastric ulcer was also present. Perforation is due to the accident of location on a free peritoneal surface, just as hemorrhage is due to the accident of location near a blood vessel. The perforated cases usually spread especially to the right, as the fluid flows down outside the ascending colon. "Acute attacks" which recur are probably due to the breaking down of the ulcer after healing, or to attacks of inflammation about the edge of the ulcer, less commonly to the formation of new ulcers. The symptoms may intermit while the ulcer remains open and unhealed.

*Course and complications.* — Codman has shown that the ulcer may heal without visible scar and the mucous membrane grow over it in such a way that it would be overlooked in gross examination. This lessens the value of autopsy statistics in regard to frequency. It may be that fewer duodenal than gastric ulcers are found at autopsy because the former heal more readily. On the other hand, most ulcers described at operation involve the peritoneum and one would expect to find traces at autopsy even if healing occurred. The time of healing is unknown; it may apparently be very slow in small ulcers.

The per cent of cases which perforate is probably small; they are usually chronic ulcers. The reports of different men show great variation: Deaver, 25%; Robson, 10%; Moynihan, 3½%. It would be very misleading to consider this the per cent of all duodenal ulcers which perforate, because perforating cases practically always see a surgeon, and the great majority of other cases probably do not.

A considerable proportion of duodenal ulcers, variously estimated, bleed. Probably a rather small per cent bleed severely, but some surgeons believe that they bleed severely if at all. My own feeling is that most, or all, bleed some and that cases with persistent negative, guaiac or benzidin tests for blood in the stools are probably the exception. We have few reliable data on this point at present. This is a work for the future. The difficulty of getting exact statistics about the bleeding in the milder cases is great. We cannot verify our diagnosis. A suspected ulcer case with no occult bleeding may be an early ulcer or a severe simple hyperacidity. We will discuss the blood tests more fully under diagnosis.

A duodenal ulcer may spread upward and involve the pylorus and cause stricture and may be called a gastric ulcer because ulceration on the stomach side is larger. Cases of duodenal ulcer causing marked obstruction of the pylorus form a separate class with somewhat different symptoms, methods of diagnosis and indications for treatment; they will not be considered here.

While cancer frequently develops on the base of a gastric ulcer, and according to Wilson and McCarthy's statistics about 70% of gastric cancer has this origin, cancer of the duodenum is very rare. Some experienced surgeons have never seen one, and men like the Mayos have only seen a few. I know no satisfactory reason why cancer develops so rarely on duodenal ulcer.

*Prognosis.* — Various opinions have been held regarding the prognosis of duodenal ulcer in comparison with gastric ulcer. Nothnagel always considered the outlook very serious in duodenal ulcer, while Boas considered it better. Recent experience favors the latter view because sometimes good healing occurs, there may be little or no scar, and less tendency to obstruct the pylorus or to degenerate into cancer. Other serious complications, such as hemorrhage and perforation, are about equally frequent. Of Mayo's 27 acute perforations of peptic ulcer, 16 were duodenal, or but little over one half.

*Symptoms.* — Moynihan tells us the symptoms are regular, definite, not easily mistaken and have few exceptions. In looking over case records we are struck at once by their long duration. The majority have lasted three, five, ten or fifteen years. The symptoms are intermittent, often completely so, the attacks lasting a few weeks or months. The large majority of the patients are males in middle life. The most striking and constant symptom is regular recurrent epigastric pain eased by food and alkalies and later returning two to four hours after a meal, the so-called "hunger pain"; after a light meal it appears earlier. In my experience with proved cases the "hunger pain" was less regular and definite in its appearance and many atypical cases were found.

There may be no symptom except the pain if the ulcer does not bleed much or has not attacked the pylorus. Many cases regurgitate acid food or acid contents from the empty stomach. Many have the habit of using sodium bicarboante regularly between meals. Vomiting is very infrequent unless the pylorus is narrowed. The appetite is usually good.

It is evident that many cases closely resemble gastric hyperacidity, and this diagnosis has been severely attacked by the surgeons, who claim that the majority of so-called neuroses with this group of symptoms in otherwise healthy young or middle-aged men are really organic. Moynihan repeats again and again that recurrent severe "hyperacidity" *is* duodenal ulcer. He considers the term dangerous because it conceals a serious organic lesion under a pleasant name.

The surgeons have done us a valuable service in pointing out the frequency of duodenal ulcer and its resemblance to severe cases of hyperacidity, but we must avoid taking an extreme view. Hyperacidity is the largest class of cases in our stomach clinics, comprising one half or more of all the stomach cases in men. The vast majority yield to medical treatment and do not become chronic. It is too much to say that most of these cases are really duodenal ulcer and need operation. Either duodenal ulcer is usually cured by medical means or these cases are mostly neuroses, not ulcer. I am inclined to the latter view. The surgeons must remember that they see a small selected group of stomach cases which have resisted medical treatment and become chronic, and not the rank and file of stomach cases with the symptom hyperacidity.

Moynihan considers the term "hyperacidity"

a misnomer because in his long series of cases the symptom was strikingly present, while an excess of free HCl in the stomach contents was the exception. Medical men have recognized for years that the symptom hyperacidity is the product of two factors, free HCl and a sensitive membrane. If the latter is very sensitive, it takes very little free acid, even less than a normal amount, to provoke the symptom. We naturally expect an ulcerated membrane to be more sensitive than a healthy one. Difficulties disappear if we consider the symptom to mean *too much acid for comfort*, whether the amount is large or small, instead of limiting the term to cases where the chemical analysis is above an arbitrary figure.

It is possible, however, that the "hunger pain" in some of these cases may not be due to acid, but to something else. Two recent patients have especially called my attention to the fact that typical "hunger pain" relieved by food may be the result of other things than acid. These two cases were referred to me with the expectation that they were duodenal ulcers. In both the chief complaint for months was of "hunger pain" coming several hours after meals and relieved promptly by food. Tests showed that neither case had any gastric secretion, either free or combined HCl. One was a neurosis, complete achylia gastrica; the other showed at operation a cancer of the stomach, not involving the pylorus. In neither case was the pain due to acid irritation.

Boldireff has shown that the fasting stomach long after a meal may slowly contract and relax, but it is not easy to see why this should be more painful than earlier, more active peristalsis in the presence of food, nor to explain the prompt relief of pain by mild alkalies by any direct effect or peristalsis. Moynihan has demonstrated by the x-ray that the pain occurs in duodenal ulcer when one half the contents of the stomach has passed out, so it cannot be due to the full or empty state of the stomach or the time of opening of the pylorus. I believe the cause of late pain after meals in duodenal ulcer is the irritation of the walls by acid stomach contents, just as in pure hyperacidity, only more marked because the wall is ulcerated. Even in cases with little free acid the symptom may be marked because of great sensitiveness of the wall. The acid chyme in the duodenum also causes active contraction of the pylorus and squeezing of the ulcer just below.

The pain comes at a time when the wave of gastric secretion is highest and the stomach contents most acid, earlier after a light than after a heavy meal. It is often associated with the vomiting of acid contents. It is lessened by a diet which causes less secretion of HCl and it is relieved promptly by means which dilute, combine or neutralize free acid. Hypersecretion is frequent in chronic ulcer and may give free acid and consequent pain after food has left the stomach.

Gross hemorrhage in severe cases which go to the surgeon is moderately frequent, according to Moynihan, having occurred in about one third of his cases, and is not frequent in Mayo's experience, who regards it not as a symptom, but as a late complication. About the occurrence of occult bleeding, there is a variety of opinions. Mayo considers that it is probably not frequent, that the ulcers are clean and free from granulations. Moynihan says that it is probably very frequent. My own experience agrees with this. I have not yet seen a peptic ulcer demonstrated at operation in any case where careful, thorough examinations of stomach contents and feces gave only negative results. We need more data, more frequent and thorough examinations for blood in this class of cases before we can decide this point.

There are many latent cases entirely without symptoms. All of us who have seen many stomach cases can count a gradually increasing number in their personal experience.

In recent surgical reports, the history has been the main reliance in diagnosis, and the physical examination relatively unimportant. There is likely to be some tenderness in the epigastrium. The analysis of stomach contents is often not characteristic. There is usually a normal or slightly lessened amount of free HCl and we find a considerable number with an excess of free HCl, but the latter is by no means the rule; in fact, Moynihan calls it the exception. Thus we see that the "hunger pain" results more from an over-sensitive ulcerated membrane than from a great excess of free HCl.

*Diagnosis.* — The early diagnosis of duodenal ulcer from simple *hyperacidity* seems to be a matter largely of severity of symptoms and recurrences, and of the presence of occult or gross bleeding. We need more data and a closer observation of cases. The future will decide how many so-called hyperacidities are really duodenal ulcer.

A study of reported cases of duodenal ulcer which have been operated show that they are far removed from the average cases of hyperacidity which throng our medical clinics. They are a selected, severe, recurrent class, usually with serious late complications. I still feel that the medical cases of hyperacidity outnumber the surgical 50 to 1. Moynihan has done us a great service by giving a detailed report of his 189 operated cases of duodenal ulcer. A careful study shows that of the earlier cases not over one fifth were at all likely to be confused with simple severe hyperacidity at the time of consulting the surgeon, and of the latter cases, not over one third. In the others, such symptoms as gross bleeding, severe pain of long duration, sometimes confining the patient to bed, marked loss of weight, perforation, signs and symptoms of pyloric obstruction, and rarely palpable tumor or jaundice, put the cases in another class at once. On the other hand, the earlier stage of many of these cases must have been quite confusing, and *earlier* diagnosis and *earlier* surgical treatment much to be desired, just as it is in gallstones before late serious complications have a chance to occur. *This is the most important point in the recent surgical work, — the necessity for better and*

*earlier diagnosis in the border-land cases in order that the patients may get better and earlier treatment.* For years I have examined all severe hyperacidity cases for an underlying organic cause, such as ulcer, pyloric obstruction or gallstones, and occasionally found one. This search must be even more carefully made in the future and the patient given the benefit of exploration if doubt arises.

I have been much interested in tests for occult blood and have used them for years as an aid in distinguishing gastric neuroses from ulcers and have been well pleased with the results, and thus far none of my cases of so-called hyperacidity which gave a persistent negative test for blood in the stools and stomach contents have to my knowledge proved later to be chronic duodenal ulcer. On the other hand, I have repeatedly examined a large number of peptic ulcers and have not yet seen a single case where a chronic, gastric or duodenal ulcer was found at operation where both stools and gastric contents gave only negative tests for blood. I realize that this differs from the experience with chronic ulcers at the Mayos' clinic in a much larger number of cases.

Bonniger has suggested a test of the sensitiveness of the mucous membrane of the stomach. He introduces 100 or 200 ccm. of decinormal HCl solution. If ulcer is present, this causes sharp pain which is easily relieved by giving milk. If there is no pain, ulcer is ruled out. This is interesting, but not confirmed as yet.

Great difference of opinion exists about the *diagnosis of duodenal from gastric ulcer*, particularly between the physicians and surgeons. Rigel says it is impossible in the majority of cases. Ewald says it is impossible in at least 90%. Dr. Graham, of Rochester, after examining hundreds of chronic ulcer cases and seeing them operated upon by the Mayos, says that if you follow the patients from the examining room to the operating room, you are forced to the conclusion that to locate a peptic ulcer is not only very difficult, but often impossible. Dr. Munro says it is a waste of time trying to locate an ulcer within a fraction of an inch.

On the other hand, W. J. Mayo says that the differential diagnosis from gastric ulcer can usually be made, and relies largely on the "hunger pain" and the location of pain and tenderness from the mid-line to the right.

Moynihan says that the diagnosis from gastric ulcer presents no great difficulty and lays much stress on the *time* of the pain. If it occurs early within an hour, the ulcer is in the cardiac half of the stomach; if from one to two hours after a meal, in the pyloric antrum; if the pain is two hours or more after a meal, in the duodenum.

I have private records of 69 cases of chronic peptic ulcer without including cases in which the symptoms were mainly due to pyloric obstruction. Ten cases, or 15%, are classed as duodenal. In looking over the records of the cases which have come to operation or autopsy and the diagnosis absolutely verified, and considering only cases in which the position of the ulcer was definitely stated, and found far enough from the pylorus to avoid as far as possible any confusion of origin, I find little to distinguish the two classes of peptic ulcers. In taking the histories, I paid especial attention to the regularity and time of the appearance of the pain, its relation to food, the effect of food to cause or relieve it, as an aid in diagnosis from possible gallstones. My records show that pain appeared one to three hours after meals, one-half to three hours after meals, two to three hours after meals, "late" after meals, just as often in gastric as in duodenal cases. It so happened that in a large portion of the duodenal cases the pain appeared very irregularly and had little relation to the usual meals, but was relieved by taking food. Moynihan's contrary experience redoubles my interest in these cases and stimulates even greater care in taking the histories. In some cases the gastric contents were highly acid, but the majority showed normal acidity only, at the time of examination. It may be that in these cases, as in Moynihan's earlier cases, the clearer picture of simple duodenal ulcer is blurred by some complication. Great credit must be given to Moynihan, and great stress laid on his conclusions, for no one has made such a searching study of large numbers of *early* cases of duodenal ulcer verified by operation.

Among the diagnostic points recently emphasized between ulcer above and below the pylorus, some have a little value and others hardly any, and we sometimes get a glimpse of poor physiology.

*Hemorrhage, whether gastric or intestinal.* — Hemorrhage is chiefly found in the vomitus in gastric ulcer and chiefly in the feces in duodenal ulcer, but is very frequently found in both in either class of cases, and has little value in diagnosis in the individual case unless we have persistent blood in the feces, without blood in the gastric contents. If blood is poured into the stomach in gastric ulcer, some is practically always found in the feces. Blood which is poured out in the duodenum is very readily regurgitated into the stomach just as bile is. In Moynihan's series the number of cases having both hematemesis and melena was greater than of those having melena alone.

*The time of pain.* — In ulcer of the stomach it has been said that pain should occur early after meals from mechanical irritation of the food, and in duodenal ulcer the pain should be late after meals because the food reaches it later. This is largely theoretical. I believe that the pain will occur at much the *same time* in these cases and for the same reason. There are two types of pain in any chronic peptic ulcer wherever located: a milder, early kind associated with mechanical irritation of food, and a later kind, much more frequent and important, due to the irritation of acid secretion and secondary spasm of the pylorus. In simple hyperacidity we know that distress, or pain, comes late after food at the time when most free acid is present in the stomach, and if this is true when the mucous membrane is unbroken, how much more will it be true in gastric or duodenal ulcer at the same

time and for the same reason. In short, irritation of the acid contents, and not simply of food particles, appears to be the chief cause of pain in any peptic ulcer.

It is not true that food reaches a duodenal ulcer an hour or two later than a gastric ulcer, or that the pain of duodenal ulcer comes hours after a large meal and earlier after a small meal because of *great* differences in the time of opening of the pylorus. All peptic ulcers are bathed with food in a short time after any ordinary meal. The x-ray shows us that after an ordinary mixed meal, whether light or heavy, with ordinary gastric secretion, traces of acid soon appear, the pylorus opens and food begins to leave the stomach in from ten to fifteen minutes. Moynihan has shown by means of the x-ray that more than half the food has left the stomach in cases of duodenal ulcer before the typical pain appears. The later pain of the large meal is apparently due to the later development of enough free acid to irritate the ulcerated surface. In short, the pain is essentially the same in both kinds of ulcer, appearing one to three hours after meals and relieved by both food and alkalies, but is likely to be *more regular* in duodenal than in gastric ulcer because of the more uniform position of the former. The duodenal ulcer is always in one place; the gastric may be anywhere in an area five or six inches in diameter.

The *position of pain* more to the right is not a satisfactory diagnostic point in duodenal ulcer. The pain is median in gastric ulcer and usually so in duodenal ulcer also.

The *relief of pain* by food is very similar in both gastric and duodenal ulcer and depends more on the size and chronicity of the ulcer, on the amount of gastric acidity and the sensitiveness of the mucosa, than on the position of the ulcer.

The *stomach tests* may be normal in duodenal ulcer and blood may be absent. In gastric ulcer we expect it to be present. It is said that in a very chronic indurated gastric ulcer there may be no blood in the stomach contents even on repeated examination with the present delicate guaiac or benzidin tests. I have not seen such a case, though they undoubtedly occur. High acidity of gastric contents is less common in duodenal than gastric ulcer. On the whole, tests of gastric contents are not of much value in distinguishing an ulcer above and below the pylorus.

The *position of tenderness* is a very deceptive symptom. It is epigastric and rarely sharply defined and is practically the same in both kinds of cases.

I do not believe there is any real difference in *chronicity* in the two kinds of ulcers; both may be acute, and both are very frequently chronic.

It is said that patients with duodenal ulcer are apt to be *better nourished* because they take extra meals to relieve their pain. I do not believe this is an important difference from gastric ulcer. Both kinds of cases are apt to limit their diet and lose weight in acute attacks and to gain in the intermissions, and the severe cases of both kinds have often lost much weight.

There is no doubt that *vomiting* is somewhat less common in duodenal ulcer; a long history of "hunger pain" with absent or late vomiting favors duodenal ulcer. The *character of the vomitus* in peptic ulcers depends on so many other factors besides the position of the ulcer that it has little value in differential diagnosis.

There can be no doubt that all kinds of peptic ulcers are relieved by the *use of alkalies* and that this relief is due to neutralizing the free hydrochloric acid of the stomach and that it is not due to the generation of gas in the stomach. Our most effective alkali is calcined magnesia which does not generate gas.

The differential diagnosis of gastric from duodenal ulcers is not a new question. It has been seriously considered by leading clinicians, and we are not asked to decide it in a new way, but in the good old-fashioned way, by the patient's symptoms. A large majority of gastric ulcers are close above the pylorus, and duodenal ulcers are usually within one-half to one inch below it. I do not believe that in the majority of cases we can locate these ulcers within an inch by the patient's symptoms.

*In conclusion, we must remember that duodenal ulcer is more common than previously supposed, and scrutinize with a special care all severe cases called hyperacidity. We must also remember that it is far more important to distinguish early all peptic ulcers from gastric neuroses, especially hyperacidity, than to try to distinguish the gastric from the duodenal ulcers.*

Gallstones are often confused with duodenal ulcer. They present the only difficulty in diagnosis, according to Moynihan. About 15% to 20% cannot be distinguished before operation. There is nothing that is new here, so I shall pass it over briefly. Gallstones are found more frequently in middle-aged or elderly women, and duodenal ulcer more frequently in young or middle-aged men. Pain in gallstones is more violent, irregular and nocturnal, without relation to food and without relief by food; in duodenal ulcer, is less violent more regular, more related to food and relieved by food and alkalies. Gallstone cases are often fat, and ulcer cases usually under weight. Jaundice is common in the first and rare in the second, while gastro-intestinal hemorrhage is practically absent in the first and common in the second. We have most difficulty in the differential diagnosis of cases with large stones in the gall bladder, too large to pass, which produce chronic symptoms with spasm and without jaundice.

The diagnosis of perforated appendix from perforated duodenal ulcer may be very confusing. This is a matter which chiefly interests the surgeons, and whose treatment is entirely surgical, so I shall pass it by.

Occasionally a case of hepatic cirrhosis with hemorrhage may simulate duodenal ulcer as it does gastric ulcer. The diagnosis is usually made easily from the history and physical examination.

*Treatment.* — The diagnosis is not an indication

for operation since there is good evidence that even chronic duodenal ulcers heal completely under medical treatment. Mayo advises that only cases which have not yielded to a reasonable amount of medical treatment should be treated surgically. Then comes the question, What is a reasonable amount of medical treatment. It is very hard to lay down rules. We must consider the individual case, the nutrition, the social status and the freedom from complications. There is no question that loss of weight and persistent or recurrent distress, pain, or pyloric obstruction sufficient to interfere seriously with normal life and work in spite of careful, thorough medical treatment are good reasons for sending the case to the surgeon. Many of these cases have been kept far too long in medical hands. It is interesting to note that Mayo's cases of mixed peptic ulcers were given ineffectual medical treatment for an average of twelve years before operation. This, or even half this time, will seem unreasonably long medical treatment in the future. We must look over our severe "hyperacidity" and chronic ulcer cases more carefully and give the obstinate ones benefit of surgical treatment much earlier and more frequently than in the past.

*Medical treatment.* — I shall not take up the medical treatment of ulcer in detail for it is well known, but simply emphasize a few points. We should treat the milder cases as we do hyperacidity, carrying out our treatment thoroughly and persistently as long as it is necessary or reasonable. We try to quiet the nervous system and to avoid stimulants of gastric secretion. The foods which stimulate gastric secretion are, briefly, coarse food, hot and cold food, meats and their juices, especially roast or salted, rare or lean meats, alcohol, spices and condiments, salt, carbonated drinks and coffee. In general, we use freely the bland, finely divided foods which have little or no effect in stimulating gastric secretion or which depress it, such as milk, cream soups, bread, vegetables in fine purées, cereals, fats such as cream, butter and olive oil, eggs, boiled meat and fish, soft cheese and cocoa. We neutralize the free acid in the stomach by means of bicarbonate of soda in one-half to one teaspoon doses or by a mixture of sodium bicarbonate with equal parts of calcined magnesia in smaller doses. These are best given just before or just after the habitual time for distress or pain. Little lunches between meals, such as an egg, or milk, or bread and butter, or cracker and soft cheese, may be given to combine with the acid and relieve symptoms. Half-dram doses of hydrogen peroxide in a glass of water after meals may be used. Petri has recently shown that this is one of the most active depressants of gastric secretion. I think the practical value of atropine to depress secretion is very limited on account of its disagreeable by-effects.

The more acute or more severe or bleeding cases should be put to bed. I wish to emphasize only one point here, namely, the modern reaction against any scheme of treatment which depends for any length of time on exclusive rectal feeding. We know the limitations of rectal feeding, that not over five hundred calories per day can be absorbed from the rectum; in short, not over one fourth or one fifth of the daily food which is needed. Thus if exclusive rectal feeding is continued, the patients are starved and weakened, thus sacrificing the body as a whole to one organ, the stomach. Many of us believe that the stomach does better if the acid gastric juice is combined by frequent feeding of bland proteids than by leaving the stomach empty and that the better nutrition of the patient will favor the healing of an ulcer. Lenhartz several years ago advised early feeding by mouth in all ulcer cases, even those with a recent hemorrhage. He planned a diet which is briefly as follows: He gives 200 ccm. of milk in small divided doses and two eggs on the first day and adds one egg per day and 100 ccm. of milk until eight eggs and 1,000 ccm. of milk are taken daily. Four or five teaspoons of sugar are added after the third day, and at the end of a week soft solids, such as soups, gruels, custard, toast, rice, scraped beef and ice cream. Senator has advised using fats in the form of cream and butter as frequently as possible, also gelatine as soft jellies. I have used such a diet steadily for several years in all acute ulcer cases and all chronic ulcer cases with acute symptoms and think the results are decidedly better than where the treatment was begun with four or five or more days of exclusive rectal feeding. The frequent feeding is helpful and the restriction to liquid food is not necessary in either gastric or duodenal ulcer.

The schedule need not be rigidly followed, but varied to suit the case. I do not begin mouth feeding for a day or two after a hemorrhage. I often find it impossible or undesirable to give so many eggs a day, and by using milk sugar added to the milk instead of cane sugar, we can begin on the first day with a tablespoon and easily increase to four or five tablespoons a day and thus add much to the food value of the daily ration. In my experience this régime rarely needs to be interrupted on account of pain, nausea or vomiting. Rectal feeding may be carried on in addition for the first week or one-half week. We must watch the diet for months after the acute attack.

*Surgical treatment* — Recent surgical experience points out that cases with severe, persistent or recurrent "hyperacidity" should be explored for ulcer if they do not yield to medical treatment, especially if the patient is not neurotic. It is unreasonable to trust medical treatment indefinitely where we suspect that a chronic indurated ulcer is present; the majority of these cases do not get well under medical care; they are essentially surgical. The Mayos have shown by interval operation that the symptoms may intermit, while the ulcer remains, open and unhealed. We now ask, What can the surgeon offer, what is the best operation, what is the risk and what the hope of benefit to the patient?

Excision seems the ideal operation, theoreti-

cally, but it is not often done. Its mortality is notably higher than gastro-enterostomy. Mayo, in one hundred and fifty-three cases of excision of the *stomach* for cancer, found that 71% had developed on an ulcer base. This fear of cancer developing on a previous ulcer does not apply in the duodenum. The duodenal ulcer very rarely becomes malignant, and excision is not so necessary. Of all the Mayos' excisions for cancer and ulcer between 1905 and 1909, 210 were done on the stomach and 8 on the duodenum. Of Moynihan's 294 operations on duodenal ulcer, only 4 were excisions, and the rest gastro-enterostomy. He advises excision only when it can be done without any risk of narrowing the gut.

Gastro-enterostomy is the usual operation. It was first devised for an obstructed pylorus, and there was some question whether it was reasonable to use it in simple duodenal ulcer without marked stasis of food or gross hemorrhage, with the expectation of relieving pain and of helping the ulcer to heal and thus of avoiding perforation, hemorrhage or extension. It was found that the acidity of the stomach contents was sometimes much reduced by admixture of duodenal contents through the new opening which appeared to favor healing of the ulcer.

There were some theoretical objections: that it was not needed to relieve pain and that it might not permanently help the ulcer because much of the food would perhaps pass through the open pylorus and the new opening would tend to close if the pylorus remained open. Also it was said operation was not as necessary as in gastric ulcer because the food is better liquefied and less irritating when it passes into the duodenum. There were also the operative risks, the possible formations of adhesions or jejunal ulcer.

The question cannot be settled by theoretical considerations, and even though we have no reported results classified strictly according to the position of the peptic ulcer and according to the presence or absence of pyloric obstruction, the results of operation as reported by the Mayos, Moynihan and others are very instructive They justify the operation in spite of any theoretical objections. In fact, gastro-enterostomy seems to be more successful in the treatment of duodenal than of gastric ulcer. Moynihan advises turning in all ulcers that do not obstruct; the gastro-enterostomy opening may not stay open and the ulcer may heal, but break down later when original conditions recur.

Moynihan has reported operations on nearly 200 cases of duodenal ulcer with a 2% immediate mortality, 79% of cures, 9½% better, 1% no better, 2% of late deaths, and the rest not traced. The Mayos' figures in chronic ulcer are almost identical. These striking figures are the product of great personal skill, large experience and perfect organization. We cannot expect them to be duplicated at present by the great mass of average well-trained city surgeons over the country. It is instructive in several ways to contrast them with the reports of 150 cases collected by Dr. Bettmann and myself, consisting almost entirely of peptic ulcers, both gastric and duodenal, in which gastro-enterostomy was done within the last eight years. They cover the same period of time, but differ in several ways. They were operated by excellent surgeons in a dozen of our largest cities in the East and Middle West; they include both types of peptic ulcer, and they represent, on the whole, later cases, for example, about 70% had well-marked pyloric obstruction. The results were as follows: 10% immediate mortality, 58% well, 6% much better, 22% no better, and 4% late deaths. There is something for *both physicians and surgeons* to do to improve these figures, for *both are equally responsible.* The physician must get a clear picture of *early* symptoms in chronic ulcer, study his cases more carefully and make an earlier diagnosis and not wait for the later picture, which means perforation, severe hemorrhage or marked pyloric obstruction. This early diagnosis should make possible earlier and, therefore, much more effective treatment, just as in gallstones.

The physician should always give medical treatment a fair trial, but this is not his whole duty; he should transfer obstinate cases much earlier to the surgeon. Years of ineffective medical treatment are a reproach if the patient has a chronic ulcer. He loses weight and strength and fresh complications arise which help to swell the mortality statistics and the per cent of failures, when he is finally sent to the surgeon.

Some physicians hesitate about transferring suitable cases to the surgeon because the present results of operation are not as good as could be desired. This attitude is dangerous and unprogressive, for physicians and surgeons are equally responsible for these results and they cannot be improved without hearty co-operation.

The choice of a surgeon is important. He should not be chosen because he is a friend or a good fellow, or a good gynecologist or genito-urinary surgeon, but because of large successful experience with *gastric* surgery. The surgeon's duty is to improve his technic and increase his experience.

A survey of recent reports shows that it is not reasonable to expect more than a 5% immediate mortality, 60% of cures and 20% of improvement in general surgical practice at present.

The surgical treatment of peptic ulcers is much the same wherever they are, gastro-enterostomy or excision, with excision of *gastric* ulcer whenever possible on account of the greater danger of cancerous degeneration.

*Summary.* — We must revise our ideas about chronic duodenal ulcer on the basis of recent surgical reports which show that it is much more common than formerly supposed. Many cases have previously been confused with gastric ulcer, hyperacidity, gallstones or appendicitis. Two thirds of the chronic peptic ulcers which come to operation are duodenal. Three fourths of chronic ulcer cases are men.

The history in early cases is more characteristic than the physicial examination. The early

symptoms, according to Moynihan, are more definite than formerly supposed; the most striking is regular, recurrent "hunger pain" in the epigastrium. We need a clear picture of early symptoms to aid us in an early diagnosis. In my cases "hunger pain" was less regular and definite and many atypical cases were found. The pain is essentially the same in both gastric and duodenal ulcer, but more regular in duodenal ulcer because of its more uniform position.

High acidity of gastric juice is present in only a minority of cases and is less common than in gastric ulcer. The symptom "hunger pain" or "hyperacidity" in duodenal ulcer is usually due to the action of a moderate amount of free acid on an over-sensitive membrane.

Simple hyperacidity is the largest class of stomach cases in men; most cases recover under medical treatment. The severe cases closely resemble ordinary duodenal ulcer. We need earlier and better diagnosis of the borderland cases.

My experience indicates that occult bleeding is very common in duodenal ulcer and a valuable aid in diagnosis. Examinations must be repeated. Negative results do not rule out ulcer absolutely. We need more data.

The diagnosis of duodenal from gastric ulcer is usually difficult in my experience, and much less important than early diagnosis from gastric neuroses, especially hyperacidity. We must distinguish sharply the treatment of *acute* from *chronic* ulcer. The first is chiefly medical; the second, chiefly surgical.

Medical treatment should be tried first in all but perforation cases, but many chronic ulcers are kept for too long in medical hands. The symptoms may disappear without the ulcer healing. It is unreasonable to continue medical treatment of a chronic ulcer for years, if the results are poor.

The medical treatment of gastric and duodenal ulcer is the same. The surgical treatment is much the same, — gastro-enterostomy, with excision of gastric ulcers whenever possible.

The physician and surgeon are *equally* responsible for the present results of operation in chronic duodenal ulcer. They can only be improved by hearty co-operation.

The duty of the physician is earlier and better diagnosis and much earlier transfer of obstinate cases to the surgeon. The duty of the surgeon is to improve his technic. Earlier diagnosis before serious complications ensue should mean earlier and, therefore, much better surgical treatment in the selected cases.

## PRESENT TREATMENT OF GASTRIC AND DUODENAL ULCER. A REVIEW OF THE RECENT LITERATURE ON THE SUBJECT.

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In 1906, at the meeting of the American Medical Association, a symposium was held by the combined medical and surgical sections on the treatment of gastric ulcer. Papers were presented by Hewes, Rodman, A. Lambert, W. H. Mayo and Billings which showed the generally accepted views in regard to the best treatment for gastric ulcer at that time.

In considering the treatment of gastric or duodenal ulcers it is essential that the different types should not be confused. In this paper the following classification has been made without attempting to differentiate between gastric and duodenal ulcers:

Acute ulcers, single or multiple, without complications.

Acute ulcers, single or multiple, complicated by considerable hemorrhage.

Acute ulcers, single or multiple, complicated by perforation.

Recurrent or so-called chronic ulcer, without complications.

Recurrent or so-called chronic ulcer, complicated by hemorrhage.

Recurrent or so-called chronic ulcer, complicated by perforation.

Recurrent or so-called chronic ulcer, complicated by stenosis.

All the above-mentioned authors agreed that the treatment of acute uncomplicated ulcer should be non-surgical, provided that proper medical treatment could be carried out. The medical treatment, at that time, consisted of rest, diet and therapeutic agents. There was some difference of opinion as to the best method of carrying out this treatment.

All the writers emphasized the importance of prolonged rest in bed for from two to six weeks, and insisted that for the following four to six months the amount of physical exercise and mental work should be carefully controlled.

Although, in regard to diet there was a difference of opinion, the ideas practically came under two groups. One urged absolute rest for the stomach for from several days to three weeks, followed by gradually increasing diet, chiefly of carbohydrates and milk. Nutrient enemas were given during the fasting period. This is known as the Leube diet. The other group favored feeding the patients by mouth at once. The diet consisted, at the start, of eggs and milk, and was planned to have a high proteid value, on the theory that the proteid combined more effectually with the acid of the gastric juice. This diet was quickly raised by increasing the amount of egg and milk and adding other substances, such as sugar, scraped beef, rice, zwiebach, etc., until the caloric values had reached the theoretical needs for the patient. This method of treatment was known as the Lenhartz diet.

There were a variety of therapeutic agents suggested, and many different ways of administering them. Bismuth subnitrate, silver nitrate and perchloride of iron were most commonly recommended. These were to be taken by mouth or introduced by the stomach tube after gastric lavage. Olive oil in large doses was a form of treatment recommended by Cohnheim.

In acute ulcers, complicated by severe hemor-

rhage, the general opinion favored treatment by medical means. If the hemorrhage persisted, some writers favored the consideration of operation. If operation were decided on, the procedure was to open the stomach or duodenum and ligate the bleeding point. In the medical treatment both the Leube and Lenhartz diets were favored. Other measures to control hemorrhage were, cracked ice by mouth, ice bag to the epigastrium, gastric lavage with hot or cold water, solutions of adrenalin chloride or other astringents.

Although cases of perforation had been reported as recovered without operation, all these authors agreed that operative interference was the proper treatment and that the earlier the operation after the perforation, the more favorable the prognosis. The operation consisted of suturing the perforation and pelvic drainage in the accentuated Fowler position. Gastro-enterostomy should only be performed in the most favorable cases and then only if subsequent stenosis seemed likely.

In chronic ulcers without complications the medical men favored medical treatment, while the surgeons favored operative interference. The medical treatment for these cases would be the same as for acute ulcer, only more prolonged.

In chronic ulcers with hemorrhage, operation was more generally favored, especially if the hemorrhage showed a tendency to recur. The time for the operation was preferably after the acute hemorrhage had ceased, except in the cases of slight continued bleeding, when operation was advised at once. Gastro-enterostomy was the operation used in these cases.

Perforation in chronic ulcer was treated in the same manner as perforation with acute ulcer.

The treatment of chronic ulcer complicated by stenosis was viewed differently by different writers. It was demonstrated that by a continued medical treatment of rest, diet and gastric lavage, the patients' weight could be maintained and their daily work accomplished. It was also emphasized that unless these patients kept up their treatment, symptoms will return. The surgeon claimed that operation offered a relief from symptoms and a permanent cure of the ulcer. The operation consisted in gastro-enterostomy, with or without excision, depending on the possibility of so doing, and the character of the ulcer area, or, in certain cases, Rodman's resection operation at the pylorus; or, if an hourglass stomach, or a callous ulcer, resection of the stomach.

The above is a short outline of the treatment of the different kinds of gastric and duodenal ulcers in 1906. What advances have been made since then in the treatment of this disease? Have any new facts been added in regard to etiology, so that treatment may be established on a more firm footing in this respect?

Mayo, Codman and other surgeons of late years have been emphasizing the fact that duodenal ulcer is much more frequent than formerly supposed and claim that the old figures of the pathologists are probably wrong. Some consider them more frequent than gastric ulcer. Hoover doubts that duodenal ulcers are more frequent than gastric. Einhorn thinks that the surgeons overestimate the number of ulcers situated around the pylorus. Hort asks whether duodenal ulcer is a local or constitutional disease. Mason, in reviewing the question of hyperacidity as a cause for gastric ulcer, says that it has not been proved as the cause, and all that can be said is that these ulcers occur only where the gastric juice flows, which apparently prevents healing. Work, in a review of the experimental researches on the subject, concludes that these ulcers are due to (1) neutralization of the natural protective bodies current in the blood stream and tissues; (2) elaboration of an endogenous or exogenous cytolytic poison, which is especially toxic for gastric mucous membrane; (3) the results of these factors is a necrosis and desquamation of the gastric mucosa, which is accompanied by a lack of mucus and an increase of hydrochloric acid. Andressen considers that these ulcers are due to a circulatory disturbance. Percy believes that they are dependent upon a chronic cholecystitis. Miller considers that the lymph follicles of the gastric mucosa become swollen, that their surface digests off, and hemorrhage results. Stockton favors Weinland's idea that there is a lack of antipepsin in the gastric mucosa. Wolff thinks that the etiology is still uncertain and that there is no proof that there is anything wrong with the gastric juice. He mentions the frequent relation between chlorosis and ulcer. Lüdin emphasizes the point that an increase in hydrochloric acid is not always an accompanying phenomena. Lenhartz says that there is nothing new in the etiology of this disease from a practical standpoint. Weintraud discusses the different theories as to etiology, but reaches no conclusion. Hoover, Wolff and Ellis have shown the possibility of tuberculosis and syphilis causing gastric ulceration, but they do not think them responsible for all gastric ulcer. Sutherland considers that bleeding from the stomach other than from ulcerations is an entity and calls it gastrostaxis.

Although several theories have been advanced in regard to the etiology of gastric ulcer in man, and considerable experimental work in animals (not included in this review), with the object of producing gastric ulcers has been reported, nothing definite has been produced which will be of value in planning treatment. The important practical point brought out is that hyperacidity does not always accompany these ulcers.

During the last few years the discussion on the treatment of acute gastric ulcer without complications has centered almost entirely upon the diet. The plan of Lenhartz in regard to earlier and more substantial diet has been tried out and opinions formed in regard to it. Many authors have regular schedules of diet for all patients, while others, although adhering to some one principle, vary their diets for the individual case.

All writers to-day, as in 1906, urge the necessity of prolonged rest in gastric ulcer. Rest in

bed at the start with careful regulation of exercise for six months to a year.

In regard to diet in acute uncomplicated ulcer, Martin, in Osler's "Modern Medicine," presents the different views without expressing a distinct preference of any one method. Lenhartz, in 1909, reports on the results of his diet as outlined above and is still enthusiastic over them. By his method he thinks that the patient's general strength is improved so that the healing of the ulcer is accelerated, and that the proteid combines with the gastric juice and keeps it from attacking the ulcer. Craig reports good results with the use of Lenhartz diet in acute ulcer. Obrastzow says that in Russia the Lenhartz diet has been tried out but has not maintained a firm footing. Leube, on the other hand, considers that the statistics for his treatment are more satisfactory. He has seen rest for the stomach cure, when food caused vomiting and bleeding. He doubts that a fasting stomach secretes gastric juice, and feels sure that gastric peristalsis after rectal feeding is less than after a Lenhartz meal. Tabora has gone back to the Leube method as he has had unfavorable results from the Lenhartz method. Schule, in experiments in vitro, shows that Leube's carbohydrate diet has as good acid-binding properties as the Lenhartz diet, but is uncertain which calls out the most secretion. He finds that under the Leube diet patients all return to their original weight after a while. Lüdin says that during the Leube treatment the hemaglobin is as good as by the Lenhartz treatment, but adds that this may be due to concentration. Lüdin also reports that at a recent congress at Wiesbaden the question of the superiority of the Leube or Lenhartz treatment was left undecided. He finds the Leube method satisfactory and less acid after a carbohydrate than a meat diet. Others, he says, find no increase in acid after albumin diet. He finds that cases treated by Lenhartz method do become emaciated and die of inanition, which shows that the power of absorption may also be involved in these cases. Pain has been a bothersome symptom in some of his cases on a Lenhartz diet. On the whole, Lüdin's cases have shown a higher percentage of cures and a greater rapidity in healing on the Leube diet than on the Lenhartz. Weintraud sums up both treatments and thinks that they both have value and should be used according to the type of case. Thus, a robust person may afford to starve for a few days, while a patient in poor condition should have all the nourishment possible. He favors usually a few days of absolute stomach rest, followed by the Lenhartz diet.

A point of interest and dispute closely related to the question of diet is, What does the fasting stomach do in regard to secretion and peristalsis? Cannon says, from his observations on animals, that rectal enemata may or may not cause peristalsis in the fasting stomach, but that it is uncertain whether there is any gastric secretion in response to the nutrient enemas. Hoover claims that muscular activity and secretion persist in the fasting stomach, and that, therefore, starvation does not accomplish its purpose. Bolton says that rectal feeding may or may not cause gastric secretion.

Other authors have modifications of these two diets, or special diets of their own. Thus, Einhorn has a diet schedule worked out for each day. It is a modification of the Leube diet. He begins feeding at once and gives in addition to milk, barley, bouillon and strained oatmeal, and gradually works up to eggs, crackers and scraped beef. He believes in frequent feedings every two hours at first. Recently he has added eggs from the start. He disapproves of meat as he considers it a strong stimulant for gastric juice and that it takes a long time to liquefy and passes through the pylorus in a swollen state.

Gilfillan quotes Ewald as stating that only four hundred calories can be absorbed by rectum, and, therefore, urges not too prolonged rectal feeding. He considers that starch granules irritate and stimulate secretion. Jacobi opposes anything by mouth at the start, and also the use of the stomach tube. Wolff considers that the ideal diet should be as little irritating mechanically as possible, should call forth the least possible secretion, should be rich in acid-binding substances and rich in caloric value. Lenhartz's ideal, he says, is to have a high caloric value, high acid-binding property, and to avoid distention of the stomach. Thus, although similar, Lenhartz's and his ideals are not the same. He has tried the Lenhartz diet without any improvements in the results. Greene protests against following any special diet in all cases. He thinks the Leube diet too poor in calories and the Lenhartz diet demands too much gastric digestion.

Schnutgen, in comparing results from the Leube, Lenhartz and Senator diets, finds the end results about the same, but thinks that by the Lenhartz method the patients get about sooner and lose less weight. The Senator diet is a middle course between the other two and consists of a diet of gluten, fat and sugar. Rolleston and Oliver advise nothing by mouth, not even water, until there is no tenderness on deep pressure over the stomach. They admit that parotitis frequently accompanies this form of treatment. Bloch favors the oil treatment of Cohnheim. He advises 100–150 ccm. warm olive oil on an empty stomach at first, and later one wineglass three times a day before meals. Greene believes in the oil treatment, but thinks that olive oil, unsalted butter and cream in increasing doses is a better way to give it.

From the above it is clear that differences of opinion still exist in regard to the best diet for gastric ulcer. The points that are made clear, however, seem to be that prolonged starvation is not necessary, and probably harmful, and that ulcers can be cured with patients taking food by mouth, which is not intensely distasteful. Another point which this review emphasizes is that it is not necessary to put all patients on the same fixed diet at fixed hours, but that variations n diet should be used to meet the individual case.

Therapeutic measures other than rest and diet have been suggested by the different authors. Martin suggests bismuth subgallate instead of the subnitrate. Lenhartz advocates bismuth so long as blood appears in the stools, iron for severe anemia, and silver nitrate if the bleeding is long continued. He urges not to hurry to empty the bowels, as he thinks the body derives some nourishment by digesting its own hemorrhage. Leube strongly favors hot kataplasmen or thermaphors to the stomach region in acute non-hemorrhagic ulcers. Einhorn favors bismuth subnitrate with magnesium to keep the bowels open. He rarely prescribes silver nitrate. He suggests codeine and atropine for severe pain. Hoover likes chalk and talcum better than bismuth as the latter colors the stools and interferes with detecting tarry stools of hemorrhage. He believes that adrenalin lessens the stomach activity. He warns against using morphia unless you know the patient, as it may cause vomiting. For pain he recommends orthoform, 7 gr., three or four times a day. Weintraud advises the use of morphia. Lüdin does not like Blaud's pills, as iron causes hyperacidity. Rosenheim and Ehrmann did not find aluminum silicate satisfactory, although under the name of neutralon it is supposed to be of value in secretory disorders of the stomach. Obrastzow favors atropine, and Greene thinks that atropine and morphia in pyloric spasm together with alkalies work well. Greene thinks bismuth in large doses unnecessary.

Mathien and Montier, Block, v. Tabora and Bowers all speak favorably of the use of atropine or belladonna. Bowers considers that bismuth subcarbonate is better than the subnitrate. Wolff uses bismuth from the start, and also silver nitrate and atropine, 1 mgm. if necessary. Hort believes in a meat diet in conjunction with an antiserum of antitrypsin and antipepsin to be taken by mouth to take care of all excess of pepsin, trypsin and acid. Thomson, W. H., favors resorcin and potassium bichromate. Kato reports that oxygar does not always diminish and frequently even increases the hydrochloric acid in the gastric juice.

From the above it is quite evident that no specific drug has been found to aid in the healing of these ulcers.

Even more than in 1906 the management of acute ulcers complicated by hemorrhage is considered to belong to the physician. Greiffenhagen says that hemorrhages cause death in only 4–5% of cases, and that operations on these cases can show no better results. Also, he points out the fact that ulcers may be multiple, which would render more difficult operative interference. Kaufmann considers that fatal hemorrhage occurs only on an average of 3%. Different authors show figures varying from 1–5%. Hoover says hemorrhages from acute gastric ulcers are rarely fatal. Weintraud says that it is frequently difficult to find the bleeding point. Finsterer, Craig, Olmstead and Musser say acute hemorrhage is not a surgical complication. Wolff, on the other hand, although admitting that it is often difficult to find the bleeding point, quotes Ewald as having seen two cases saved by gastro-enterostomy for hemorrhage.

It seems fair to treat this complication of acute ulcer as a non-surgical disease. What procedure, then, should be employed in this complication, in regard to rest, diet and therapeutic agents? All agree to absolute rest during the hemorrhage and cessation of diet during the active bleeding. Lenhartz starts in with his diet immediately upon cessation of the hemorrhage. Out of 262 cases, only 18 had any more bleeding. In his last 120 cases he had only one death, and this case had a severe anemia and psychosis. He considers that his diet keeps the acid of the gastric juice from attacking the thrombus. Leube, on the other hand, has seen food cause bleeding and favors absolute cessation of diet. v. Tabora favors the Leube method of treatment in hemorrhage. Obrastzow reports that they use this method in Russia for hemorrhage. Wolff does not find any better results with Lenhartz than with Leube treatment in the frequency of recurrent bleeding. Einhorn favors rectal feeding for three to five days after hemorrhage, with gelatine and cracked ice by mouth. After that period he starts on his own modified diet. Weintraud and Lüdin favor the Lenhartz diet after a period of rest for the stomach. Kaufmann believes that food should be stopped both by mouth and rectum, and he thinks that Lenhartz's method starts up bleeding. Jacobi and Bolton advise against food by mouth at once, and favor rectal feeding. Hort believes in small dry diet, chiefly of meat. Mathien and Montier report that the French believe in rather early alimentation after hemorrhage.

The consensus of opinion seems to be in favor of stopping food by mouth at the time of hemorrhage and for a few days following it, and then to begin with either a light or fairly heavy diet dependent upon which you favor in uncomplicated acute ulcer.

On the side of therapeutic agents and other devices Lenhartz advises 1 mgm. silver nitrate pills three times a day if the bleeding tends to keep up. Hoover favors 5% sterile solution of gelatine every two hours, and 1 oz. of adrenalin 1:1000 solution in 2 oz. of water. Einhorn favors both adrenalin and calcium lactate by mouth. He and Leube favor cold applications to the abdomen. Bowers, however, considers that the ice bag increases peristalsis. Weintraud thinks that gelatine is of no value by mouth and rectum and is too painful subcutaneously. He also does not think adrenalin effective. In one case he had a cessation of bleeding follow an intravenous injection of 10% salt solution. Kaufmann and Jacobi suggest ligatures to the four extremities to check the venous return. Kaufmann also mentions venesection to cause a faint. He does not think that the usual styptics are reliable and warns that after the vasoconstriction effect from adrenalin vasodilation follows. The reports from gelatine and serum are not convincing, and gelatine may

cause sepsis or tetanus. Kaufmann favors bismuth and stomach washing with not over 300 ccm. of water at a time. Wolff favors lead and iron salts and morphia for bleeding. He mentions as a possibility the use of 10% salt solution, but has not tried it personally. He suggests drinking hot water or washing stomach with cold water or a dilute iron solution. Van den Velden claims that hirudin favors blood coagulation and suggests also a 5–10% salt solution intravenously. Hort advises sterile normal horse serum subcutaneously. Stockton strongly recommends washing out the stomach with ice water, or adrenalin chloride, followed by gelatine water, and at the same time external cold applications. Greene says that the stomach tube may cause hemorrhage.

It will be seen from the above that there is no one device which can surely control hemorrhage, but that there are several things which may be tried if morphia, rest and ice bag do not control it.

All writers agree that acute ulcer with acute perforation should be operated upon as soon as possible after the perforation. The surgeons all agree on tying off the perforation and nearly all agree on draining. Recently Blake and Brewer, in New York, have been closing the abdomen without drainage, after flushing out with a Blake tube, in some of these cases with good results. Considerable difference of opinion exists, however, on the question of excision of the ulcer or the performance of gastro-enterostomy.

Moynihan says, Do a gastro-enterostomy when the perforation looks as though it would cause stenosis on healing. Greiffenhagen advises excision if there is sufficient surrounding tissue. Deaver favors gastro-enterostomy after closing the perforation as he thinks it hastens convalescence and prevents recurrence. Gibbon and Stewart advise against gastro-enterostomy at the time of the perforation operation. Finsterer says to freshen edges of perforation and suture and advises excision only in most favorable cases. He admits the value of gastro-enterostomy in stenosis cases, but feels that it takes the patient's strength and should be done at a second operation. He advises washing the general peritoneal cavity and using Luschke's suction apparatus. Mühsam says to excise only when it is difficult to close in the perforation well with suture. In regard to the best time to operate, Heinemann warns against waiting too long for the initial shock to wear off.

What is the best form of treatment for recurrent or so-called chronic ulcers without complications? On this point there is the most dispute as to whether surgical or medical treatment should be carried out. It has been repeatedly shown that ulcers treated by medical means are apt to recur in half if not more of the cases. Clairmont has shown that the fatalities from operation in the hands of experienced men like Mayo, Moynihan, Robson, etc., is less than 5% and that this percentage is growing much less when only recent statistics are considered. Mayo points out the fact that it is in these recurrent ulcers that perforations are most likely to occur and thinks that a chronic callus never entirely heals up. Wilson and MacCarty show the tendency of cancer to develop at site of chronic ulcer. Payr advises operation in ulcer with marked induration or adhesions, which does not respond to medical treatment. Steinthal, Zesas and Deaver favor operation in these cases if life is not rendered pleasant and healing complete by medical means. Moynihan advises operation as soon as recurrent ulcer is called chronic, but admits it is difficult to decide when to call an ulcer chronic. Blad, Heile and Spischarny lay stress on the fact that after gastro-enterostomy the acidity of the gastric juice is diminished and, therefore, it is not so advisable if the gastric acidity is low. On the other hand, it relieves a hyperacidity. Hort says that many chronic cases recover with medical treatment, and some surgical cases relapse. Rubritus says that gastro-enterostomy will heal pyloric and duodenal ulcers, and Bidwell claims operation should be done as soon as diagnosis of duodenal ulcer is made. Spriggs, on the other hand, opposes operating as soon as a diagnosis of duodenal ulcer is made, and Craig favors giving medical treatment a good trial. Syms favors an early laparotomy in chronic cases as the disease may be gallstones or malignancy.

Thus it seems justifiable, in view of the above facts, to advise operation in cases which show a repeated tendency to recur, or in cases that are not ever entirely relieved from symptoms. The best type of operation will be considered later.

Perforation complicating a recurrent or chronic ulcer should be treated in the same manner as in acute ulcer.

In recent years the tendency has been to urge operation on chronic ulcers complicated by hemorrhage, whether the bleeding is in large amounts or slight, but persistent. Moynihan advises operation on recurrent or increasing hemorrhage from gastric or duodenal ulcers. Greiffenhagen urges surgical intervention for chronic bleeding, either macroscopic or microscopic. Einhorn advises operation in the interval following large recurrent hemorrhages which threaten life, and for small persistent losses of blood. Finsterer, Bidwell, Rubritus and others all favor operation for small persistent hemorrhage. The type of operation in chronic ulcers complicated by hemorrhage will be considered later.

In chronic ulcer complicated by stenosis the tendency at the present is towards operation. It is important to differentiate between stenosis caused by mechanical blocking from the induration and scar tissue around the ulcer or perigastric adhesions, on the one hand, and that caused by reflex spasm of the pylorus on the other. Hewes has recently pointed out the importance of recognising small amounts of stasis. If one examines the residue of a fasting stomach, under the microscope, even if it is only one or two teaspoonfuls, it is frequently possible to demonstrate food stasis which would escape attention in macroscopic inspection. Some medical men still favor

treating these cases with careful diet, regulated life and frequent use of the stomach tube. On the other hand, Moynihan says, Operate with narrowing of the pylorus. Payr and Steinthal advise operation in scar stenosis or ulcers with adhesions. Greiffenhagen admits that patients with pyloric stenosis can be kept comfortable by medical treatment, but usually go down hill from undernourishment. He advises leaving early light cases to medical men. Einhorn advises operation in pyloric ulcer with peristaltic restlessness and continuous hypersecretion, in advanced stenosis, and in duodenal ulcer with pylorospasm and beginning peristaltic restlessness. Heile says, Operate in stenosis, and Port says that the operation on gastric cases is rapidly becoming an operation for stenosis according to the statistics. Wolff mentions the use of thiosinamin, which is fibrolysin, in cases of scar tissue and adhesions for the purpose of dissolving and causing to disappear the fibrous tissue. He thinks it is without effect. Paterson writes on the occurrence and cause of jejunal ulcers following gastro-enterostomy. Mayo thinks that true jejunal ulcers are exceedingly rare and that gastrojejunal ulcers are more common. The frequency of these ulcers is much less, however, as operative technic improves. Craig emphasizes the importance of following up the after-treatment in surgical cases in order to prevent an excess of hydrochloric acid from recurring. Musser insists that spasm of the pylorus from hypersecretion and hyperacidity is not a surgical disease, but considers that stasis from organic change is. v. Tabora advises atropine for the treatment of pyloric spasm.

The best procedure at the present time seems to be operation if true stasis can be demonstrated, whether in the gross or by the use of the microscope.

The type of operation depends somewhat upon the site of the ulcer. In chronic gastric ulcers away from the pylorus, Moynihan says excision is the best operation. On the other hand, Greiffenhagen advises gastro-enterostomy with resection and excision only if the case is very favorable, or a suspicion of cancer exists. Hochenegg considers that gastro-enterostomy is the best operation for all types and locations of gastric ulcers, while Payr considers that resection is a better operation. Craig, quoting Cannon and Blake's observation that after gastro-enterostomy on animals, food continues through the pylorus, considers that resection is the better operation. Clairmont's figures show that gastro-enterostomy helped in only 47% of ulcers away from the pylorus, in 62% of ulcers at the pylorus and in 73% of ulcers in the duodenum.

In chronic ulcers at the pylorus or in the duodenum Payr advises gastro-enterostomy, gastro-duodenostomy or resection of the pylorus. In severe cases he advises a jejunostomy under local anesthesia for feeding purposes with a subsequent gastro-enterostomy and resection later. He favors resection over excision. Cannon says physiologically the operation of pyloroplasty where possible is more reasonable than gastro-enterostomy. Greiffenhagen and Moynihan favor gastro-enterostomy for this type of ulcer. Deaver favors usually gastro-enterostomy and occasionally pyloroplasty. He advocates excision if the ulcer is indurated. Wolff favors resection of the pylorus instead of gastro-enterostomy where possible. Rubritus and Syms, quoting Rodman, favor resection in addition to gastro-enterostomy. Rodman, in 1908, pleads for pylorectomy if possible, as it is only a little more serious and much more effective. Mayo, at a recent meeting, summed up the question of the kind of operative procedure by his remarks that in gastric ulcers, excise if possible, and usually do a gastro-enterostomy, and in duodenal ulcer, excise if possible, and always do a gastro-enterostomy.

To return to the original classification of ulcers, in brief, the treatment may be outlined as follows:

Acute uncomplicated ulcer — medical means.

Acute ulcer complicated with hemorrhage — medical means.

Acute ulcer complicated with perforation — surgical intervention.

Chronic uncomplicated ulcer — medical means soon to be followed by surgical if former are unsuccessful.

Chronic ulcer complicated with hemorrhage
Chronic ulcer complicated with perforation
Chronic ulcer complicated with real stenosis
} surgical treatment.


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## INDICATIONS FROM A MEDICAL STANDPOINT FOR OPERATIVE PROCEDURES IN THE PRESENCE OF CHRONIC GASTRIC SYMPTOMS.

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Probably no greater field for strife between medical and surgical men exists than in abdominal affections giving rise to gastro-intestinal symptoms. The medical side argues that surgical treatment, except with serious complications, gives too high mortality and accomplishes no more than medicine. This applies particularly to cases of duodenal and gastric ulcers, gallstone disease and appendicitis with rather indefinite focal symptoms, or at least chiefly those cases of so-called "hypersecretion." The surgical men reply that, as a rule, cases are sent to them only when grave complications exist, which enormously increases the mortality and also decreases the opportunity for complete cure.

Undoubtedly both sides have some reason for their position. The medical men, especially those not well trained in gastro-intestinal diagnosis, and unable to make a fairly positive diagnosis in the face of mild persistent symptoms, fear to take the responsibility of recommending operation. This is frequently on the ground that they have had some sad experiences, such as nervous dyspepsias, killed by gastro-enterostomy, or cases of duodenal or gastric ulcer or gallstones in which the surgeon contented himself with only the removal of the appendix and thus left the patient as badly off as ever or needing one or two more operations, or dying of some complication. These sad results are sometimes to be blamed on the surgeon for not being willing to explore other suspected sources of disease, but it is much more often the physician's fault who from insufficient examination is so uncertain about the conditions that he leaves it all to the surgeon, without special recommendation for thorough search. The surgical side is absolutely right in saying that too great hesitancy and delay occurs in the hands of most medical men. Therefore, there should be a correct position and a standard upon which to classify cases.

My personal method is to place cases in one of three groups after sufficient examination, diet tests, etc. The first consists of those which, to my mind, it is absolutely wrong to give medical treatment, and if the patient refuses operation, I refuse to treat them. The second consists of cases where I am reasonably certain that operation should be performed to insure complete cure or more safety to the patient, but in whom the symptoms and disablement are not sufficiently great to refuse them medical treatment. The latter I only carry out under protest, having thoroughly explained that I cannot promise a medical cure and that they are in danger of certain serious complications. The last group comprises cases of a purely medical type in which excellent results are obtained by medicine or where surgery could be of no avail and where I would oppose surgical interference.

The cases which come to my office or to that of any gastro-intestinal specialist, in the large majority, complain of eructation, burning at the pit of the stomach or esophagus, so-called sour stomach, fullness, distress, regurgitation, constipation, sometimes nausea, vomiting and pain, feeling of emptiness and faintness at the stomach. With these symptoms the analysis of the stomach contents with proper test meals sometimes shows an increase, decrease or normal HCl, occasionally the presence of lactic acid and microscopic or macroscopic vegetable residue, the presence or absence of occult blood, but always very little or thin stomach mucus. The stools are often hard, small and frequently show an increase in fat globules, fatty acid crystals and an excess of half-digested muscle fibers and sometimes occult blood. The urine and the blood show no constant changes.

The cases of this group can be pretty sharply divided into the following sub-groups. Firstly are the gastric neuroses, occurring in nervous fatigue and hysteria and showing either abnormality in the sensory, secretory or motor function, but usually more or less in all three, yet with no organic basis. These include cases with distress, fullness, pressure, eructation, regurgitation and vomiting of the neurasthenics; also many of the cases with nervous increase in HCl frequently classified as hyperacidities or hypersecretions. Gastric crises may be introduced here for want of a better place. Secondly, we have the mechanical conditions, often associated with nervous symptoms, such as gastroptosis or adhesions from other organs interfering with the function of the stomach. Thirdly, a great group, the majority, is formed by a condition which I call chronic non-mucous gastritis and which comprises many so-called hyperacidities, hypersecretions, gastrosuccorrhea, chronic parasecretion and many cases generally passing for nervous dyspepsias, gastric symptoms of Bright's, heart and lung diseases, of the female adnexa, the gastro-intestinal symptoms of chronic appendicitis, gall-bladder disease, pancreatitis, adhesions, cases called gastric excoriations by Einhorn, or chronic hemorrhagic gastritis by Pilcher. I may be sharply criticised for placing a large percentage of cases of so-called hyperacidity and hypersecretion in my group of

chronic non-mucous gastritis, yet there has been experimental evidence to demonstrate organic changes. Korczynski and Jaworski have demonstrated that in cases of so-called hyperacidity or hypersecretion, or from pieces of the stomach excised during the removal of an ulcer which had been accompanied by great hyperacidity, that there were marked changes both macroscopic and microscopic in the mucosa. The latter showed a pronounced "état mamelonné"; microscopically, they saw extensive small round-cell infiltration beneath the raised epithelium which extended downward between the interglandular tissue into the submucosa and even penetrated the tubules of the glands. The peptic cells were degenerated and disintegrated, whereas the parietal cells were well-preserved. These are certainly, to my mind, changes indicating an inflammatory condition and may righteously be classified as a gastritis instead of as a neurosis. Yet, in other cases, rarer ones, of gastro-succorrhea or hyperacidity, they were unable to find anatomic changes. These comprise the class which I place under gastric neuroses. Riegel states that in hyperacidity the pathology is not known because simple uncomplicated cases do not come to autopsy, and takes the stand that there probably is no pathological change; yet he himself reports a case which died of pneumonia where superficial excoriations were found.

The fourth group of our classification comprises gastric and duodenal ulcers. Not alone the gastric, but even the duodenal ulcers may be preceded, produce or keep up not only secretory changes, but also low-grade inflammatory reaction in both the stomach and duodenum. In fact, Fenwick ascribed the "hunger pains" in duodenal ulcer to hypersecretion, which to my mind is secondary to a low-grade gastritis. The fifth group comprises cancers originating from previous ulcerations.

The above-mentioned group of symptoms are by far more common than another syndrome, where pain is rarely found, where the appetite is absent, food, especially meat, causing nausea, the latter symptom being very frequent even at other times, accompanied by a feeling of fullness and distress and vomiting in from one to three hours after meals. This vomiting consists of badly tasting material made up of partly digested food not in large amounts, but containing much mucus. There is also nausea, and vomiting on awaking, of small quantities of tenacious mucus. In these cases the test breakfast shows very little digestion of the bread, but the same is intimately mixed with tenacious mucus; retention even microscopic is not very frequently found; hydrochloric acid is either greatly diminished or absent, lactic acid may be present, but there is always large quantities of characteristic mucus. The stools may be soft or hard, frequently loose or spongy, putrefactive and containing considerable undigested residue, especially connective tissue and elastic fibers. This last symptom-complex comprises the cases called by various authors chronic catarrhal gastritis, chronic gastritis, but which I prefer to call chronic mucous gastritis. These cases are rather rarer than the chronic non-mucous gastritis, and, although they may be occasionally secondary to other affections, are very apt to be primary, due to indiscretions of diet, but most frequently to excessive use of alcohol and tobacco. They are the ones which at autopsy show the greatest diffuse changes in the stomach.

*Pathologic physiology.* — There is no doubt, as has been proved repeatedly, that emotional and nervous conditions have a tremendous influence upon the character of the secretion of the stomach as upon its motility and sensorium. For instance, it is well known that sudden shock or bad news during or preceding a meal may arrest the secretory and motor functions of the stomach, resulting in stagnation, feeling of distress and frequently rejection of the meal undigested. In like manner, continued nervous strain and irritability is very prone to produce an increased secretion of HCl or of total gastric juice with a diminution of the mucous contents, as there seems to be a certain opposite relation between the two constituents, HCl and mucus. It is easy to see how a mucosa either of the stomach or duodenum continually irritated by an over-acid secretion without the protection of the normal thin mucous coating may partake of a low-grade irritation, which may give rise to still further increased acidity and later to the formation of superficial excoriations which in turn may become ulcers by self-digestion. On the other hand, certain conditions or reflexes emanating from other organs may check the formation of HCl when the mucous membrane becomes more prone to infection; thus a gastritis results of the type first described by Einhorn, under the name of erosions, and later by Pilcher as chronic hemorrhagic gastritis. This form is less apt to produce ulcers because the gastric juice usually contains little or no hydrochloric acid, and under these conditions self-digestion is not so apt to occur as proved by the experiments of Bolton.

With inflammatory processes of the stomach and duodenum, it has been repeatedly shown lately that involvement of the gall bladder and pancreas is not infrequent, and, in fact, this involvement is presented by an eminent English surgeon as one of the great dangers in the persistence of a non-operated duodenal ulcer. Thus, cholecystitis or pancreatitis may result from ulcerative duodenitis. Through the reception of improperly digested food, the lower parts of the intestine become involved and it is most common to have some form of low-grade enterocolitis present in cases of chronic inflammation of the stomach, as I have shown in a previous publication. This may give rise either to diarrhea or constipation, but more frequently to constipation, which in itself greatly aggravates the condition. The unnatural contents stagnate in the region of the cecum and produce a low-grade cecitis which next spreads to the appendix. I have frequently had cases coming to me for chronic constipation with pain in both right and left

iliac fossa and exquisitely sensitive at McBurney's point and on palpation of the cecum. These would frequently clear up rapidly upon proper treatment for the colon and stomach. In such cases the test is the treatment. If they do not react favorably, the appendix is probably involved beyond reach, and probably, on account of an anatomical twist, short mesentery or constriction at the neck, will never quiet down and there should be operation soon.

As there is a physiologic correlation of functions of the gastro-intestinal tract, so we have also a very close correlation of pathologic conditions forming a vicious circle.

In going over carefully the early histories of ulcers, one is struck by the great mildness of the first symptoms, their exact resemblance to cases of nervous hyperacidity and easy relief by treatment applied to this affection. This and the fact that in a previously always strong robust man it is not likely or pathologically possible that a callous ulcer would spontaneously form out of a clear sky with no previous changes whatever in the stomach, leads one to the natural conclusion that probably first functional secretory changes occur followed by an inflammatory condition with lowering of the resistance of the stomach and duodenal mucosa, with subsequent erosion, then ulcer formation. In other words, we have a pre-ulcerative stage to duodenal and gastric ulcers.

To continue with our chain, it is easy to fancy that in some cases inflammation of the duodenum may lead to cholecystitis with or without stones; likewise the chronic low-grade irritation of the intestines may spread to the appendix, which, on account of its frequent anatomic malformation and malposition, is unsuited for medical treatment or proper natural drainage of its inflammatory products.

The interesting cycle begins here. It has been proved beyond reasonable doubt by American, French and English surgeons that diseases of the appendix or gall bladder reflexly cause gastric irritation or inflammation which is frequently relieved by removing the remote offending causes. The symptoms are those which I classify under chronic non-mucous gastritis and occasionally show an increase in HCl, but perhaps as frequently a decrease with excoriations, the latter condition having been so well studied by McGrath in cases of appendicitis. With these conditions there is often associated a spasm of the pylorus so that emptying of the stomach is delayed. The pain has been ascribed to this spasm, but I am rather inclined to refer it to the hypersensibility of the inflamed mucous membrane to the retained products of digestion or decomposition. If inflammation is produced of the particular type necessary, it is easy to see how ulcers may result.

When we grasp this correlation of pathologic conditions, we can easily understand the reason for the frequent association of several organic conditions at once capable of giving rise to gastric symptoms. The appended table taken from Fenwick is interesting; these are cases which he calls hypersecretion and most of which I would call non-mucous gastritis, which he had had operated during the last two years with advice to the surgeon to make careful inspection of all the abdominal organs, particularly stomach, duodenum, gall bladder, pancreas and appendix.

FENWICK'S TABLE.

| | Cases. |
|---|---|
| Chronic ulcer of stomach, | 13 |
| Chronic ulcer of duodenum, | 46 |
| Gallstones, | 12 |
| Chronic appendicitis, | 22 |
| Gastric and duodenal ulcers, | 3 |
| Gastric ulcer and appendicitis, | 5 |
| Duodenal ulcer and appendicitis, | 4 |
| Cancer of the pylorus, | 4 |
| | 112 |

As may be seen in 112 cases with symptoms of "hypersecretion," over one tenth had a double lesion as a cause or association practically equal to the number of simple gallstones or simple gastric ulcers. The number of cases of double lesion were one half as frequent as cases of simple appendicitis which we consider so common. The most common cause of the symptoms was a duodenal ulcer, the next was a simple chronic appendicitis, the third was a complication of several conditions and only subsequently came simple gastric ulcers, gallstones and carcinoma. It is not surprising that four cases of gastric cancer showed themselves to Fenwick with perfect symptoms of "hypersecretion," since it has been shown by the Mayos and others that most gastric cancers originate from a previous ulcer. In considering the results of this careful gastro-enterologist who had his operations performed by careful surgeons with instructions for thorough search, we are struck by the fact that in operations performed with this syndrome the chances are very great, at least one in ten, of finding two distinct pathological conditions. I have had a case with three, namely, duodenal ulcer, gallstones and calcareous appendicitis.

If these conditions, gall-bladder disease, chronic appendicitis and gastric and duodenal ulcers, all may produce a chronic non-mucous gastritis, called by Fenwick and others "hypersecretion," the symptoms of these various diseases must frequently be alike, and they are. And unfortunately, these same symptoms frequently represent a non-mucous gastritis resulting from constitutional diseases, as of the heart, kidney and lungs, nervous conditions and indiscretions in living. Therefore, the problem of the medical man is to make an etiological diagnosis, and Mayo is absolutely right when he ridicules the present meaningless German classification of gastric affections.

Occasionally gastric symptoms tend to show a certain type, especially as regards the symptom of pain in gastric and duodenal ulcer, chronic appendicitis and gallstone disease, and on next page is appended a table which I published last year. This, however, is not at all constant, but may occasionally serve as a guide to differentiate the sources of the "hypersecretion."

TABLE OF PAIN.

| | Location. | Radiation. | Time. | Sensitive areas. | Influence of food. |
|---|---|---|---|---|---|
| Duodenal ulcer. | Epigastrium a little to the right. | Right side. | Two to three hours after meals. | Sometimes deep epigastric, — but not constant. Right subscapular skin area (superficial). | Relieved especially by fatty food, as milk, cream, oil and also by alkalies. |
| Gastric ulcer. | Epigastrium. | Left side. | Immediately up to two hours after eating. | Almost always marked at seat of ulcer, very much localized. | Usually aggravates if ulcer is at fundus, but may relieve when pyloric. |
| Gallstone disease (gastric symptoms). | Under right ribs and epigastrium. | To right chest and back. | At any time, but often immediately after eating. | By hooking thumb under right lower costal border can elicit, besides pain, spasmodic arrest of respiration on taking a long breath. | Makes worse, and frequently nauseates. |
| Chronic appendicitis. (gastric symptoms). | Epigastrium and frequently right hypochrondrium. | Down into lower abdomen. | At any time. | Over McBurney's point and sometimes diffuse tenderness at epigastrium. | Usually does not improve. |

I always held the same position as that of Mayo, and which Hall, an internist, has just published, that it is not necessary for the medical diagnostician to make an absolute diagnosis of all the anatomical changes before the abdominal section. These must be made or corroborated by a well-trained and careful surgeon at the time of the operation. The medical diagnostician's part is to decide whether at least one or more of these medically irremediable conditions are present, to recommend laparotomy with instructions to search especially for ulcers of the stomach, gallstones and appendicitis, besides the condition of the pancreas and other abdominal organs. The exact diagnosis may, however, not infrequently be made by a gastro-enterologist.

It is not difficult to decide that a case is a secondary gastritis, due to phthisis, cardiac or renal disease suitable only to medical treatment, or that it is some acute condition, as an acute perforation or acute hemorrhagic pancreatitis, demanding immediate surgical interference. It is not difficult to determine that a case with obstruction and retention is almost invariably a duodenal or gastric ulcer, if not a carcinoma; all needing early surgical interference, since no ulcer which goes to obstruction ever gets well without surgery. Thus it is my practice to use the stomach tube only for diagnostic purposes, never for therapeutic aims, in cases of obstruction, as *those needing stomach washing should have gastro-enterostomy* What is more difficult to decide is whether a case is one of an unhealable callous ulcer of the stomach, a grumbling low-grade cholecystitis due to a stone or a twisted chronically inflamed appendix producing reflexly the symptoms of chronic non-mucous gastritis without focalization; or whether these symptoms are purely the result of altered secretions incident to prolonged nervous fatigue and strain combined with improper dietary.

Certain changes in the composition of the stomach contents, feces and urine have a significance which, taken along with history and physical examination, may aid us immensely. The presence, increase or decrease in HCl to me means but little in differentiating on the one hand between cases due to appendicitis, gall-bladder disease or ulcers, and on the other hand simple non-mucous gastritis uncomplicated by surgical conditions.

Hereafter, I shall use the term "complicated" as meaning complicated with some surgical conditions. The presence of macroscopic retention is decisive in favor of "complicated" disease, and usually ulcer, duodenal or pyloric. Microscopic stasis is oftener found in complicated cases and more especially with ulcers not only in the pyloric region, but even at the cardiac, as I have observed several such cases. This was probably to be explained by reflex spasm of the pylorus. Obvious or occult blood in the stomach contents is considerably in favor of complicated disease, although I have seen it with gastritis of Bright's disease, which in one case cleared up completely under treatment and three years after has had no return of gastric symptoms. Blood does not always mean ulcer, as it may signify erosions secondary to appendix or gall-bladder disease. In the feces in a case of non-mucous gastritis, decreased digestion of foodstuffs is suggestive of complicated disease. Blood in the feces has, to my mind, much more significance than in the stomach contents after we have excluded hemorrhoids, ulcers and excoriations of the rectum and sigmoid by sigmoidoscopic examination. It is fairly characteristic of a complicated condition, and usually ulcer of the duodenum or stomach.

The test upon which I place most reliance in determining between surgical and medical cases is the therapeutic test. The details of my test is to form the subject of another publication. In a general way, if there is not immediate absolute indication for radical treatment, I place all patients with symptoms of chronic non-mucous gastritis on a test diet, which is chiefly lacto-farinaceous, perfectly smooth and usually with lunches between meals. (This differs considerably from the Leube, Lenhartz and other well-known diets.) The patient follows a hygienic treatment of baths, certain forms of exercise and takes bromides to relax the nervous strain and to bring about restful sleep. The bowels receive also appropriate treatment.

Cases of nervous hyperacidity or hypersecretion and of simple chronic uncomplicated gastritis, with or without erosions, improve immensely within one to two weeks, and the improvement remains permanent. Occasionally strain and worry or gross indiscretion of diet bring about another attack, and if these are often repeated, naturally ulcer may follow. Yet, it is my firm belief that if moderate hygienic and dietetic rules were followed by patients in this pre-ulcerative stage, ulcers would more rarely result.

On cases of gallstone disease, or of chronic appendicitis, the effect of the treatment is not very great. There may be a slight improvement in the sour stomach and distress, but some pain usually persists even after weeks, months and years, if allowed to continue.

With cases of gastric and duodenal ulcer, if not too far advanced and inflamed, the results seem wonderfully successful at first, as most of the pain and distress disappears in a short time, and in the past I have had such cases which I believed to be simple hyperacidity on account of the ease with which they were cured each time and because of the rarity of the attacks; yet, on looking over my records very carefully, I found that cases which only came to me once in six months to two years for the relief of an attack did, on cross-examination, admit that between times, although they were generally well, still occasionally had little distress and pain which were promptly relieved by soda. In other words, although cases of ulcer may give the physician credit for having cured them, because they are relatively so much better than before treatment, and because they have learned to suffer a slight amount of stomach distress as a normal condition, yet few if any will admit on sharp cross-examination absolute freedom from any distress between attacks even on a very smooth diet. And this is the diagnostic point between ulcer cases and uncomplicated non-mucous gastritis. This statement is based upon the observation of cases which ultimately came to operation where the diagnosis was absolutely proved.

Advanced stages of ulcer are resilient to the test treatment and show no improvement.

Patients who improve markedly within two weeks under the test treatment I continue to treat, while watching carefully for focal symptoms, and later I broaden their diet. If in a month or six weeks they are entirely well, with no sensitive areas and no symptoms whatever, I regard them as simple chronic non-mucous gastritis with a possibility of ulcer to be revealed later, but as distinctly medical cases. If an attack recurs within a year or more, with the history of not absolute comfort in between times, I suggest operation with the probability of finding a surgical condition at the basis. In cases not benefited at all by treatment within two weeks and having the symptom of pain, I unconditionally order operation. These include inveterate ulcers and many reflex gastrites from appendix or gall bladder.

Concerning the cases of suspected appendix or gall bladder with reflex chronic gastritis which improves somewhat under medical treatment, I continue treatment for a few weeks unless some focal symptoms develop to clear the diagnosis. If in six weeks to two months the patient is much improved, but not entirely, and with some local symptoms, I order operation believing that the gastritis is not simple.

### SUMMARY.

1. Cases in which I order immediate operation and refuse medical treatment after the test diet are those suffering considerable pain and having shown no marked improvement within two weeks.

2. Cases for which I recommend operation and treat only conditionally, explaining risks, are those improved but not wholly cured by test treatment of few weeks' duration, showing some pain and local sensitiveness at either upper quadrant or at McBurney's point.

3. Cases where, to my mind, question of operation does not enter are those when first attack is rapidly and completely cured in two weeks' test treatment; or in others where constitutional diseases form a contra-indication to surgical procedures.

Below are cited, out of various series, some of the most typical cases, illustrating the difference of types and the classification.

Case 1. Mr. T. C., age twenty-one. Father died of stomach trouble at forty-five. Patient had typhoid fever eight years ago. Two years ago distress and vomiting one-half hour after eating, lasted two months. Perfectly well until two months ago, when same trouble started. No pain whatever, but distress from 3 to 7 P.M. and vomits large quantities. Appetite excellent. Examination: Fairly well-nourished, good color, weight 143. No sensitive spot; stomach, lower border, two inches below the umbilicus. Stomach expression gave two quarts vegetables eaten fourteen hours before, strongly acid, with HCl. Clinical diagnosis: Duodenal or pyloric ulcer with cicatrical contraction causing pyloric obstruction. Therapy: Recommended immediate operation. Operative findings and procedures of surgeon (Dr. Bottomley): Old duodenal ulcer nearly encircling the second portion of the duodenum. Posterior gastro-enterostomy and closing of the pylorus. Excellent recovery, never vomited again. Two years after operation has gained 30 lb. and remained perfectly well.

Case 2. Miss C. M., age forty-five. Family history good. First stomach trouble ten or twelve years ago,

when she had an attack of indigestion, with pain across the stomach. Relieved by vomiting. Troubled usually after eating. Attacks formerly came on at intervals of months, but lately has had one for three months without relief, while before they only lasted a few days. Examination: Poorly nourished woman, large frame, weight 149, against her best weight of three months ago of 160 lb. Lower border of the stomach three inches below umbilicus. Visible peristalsis from left to right. Stomach expression gave 500 ccm. with spinach and other vegetable material from a meal taken fourteen hours before. HCl 0.25%. Clinical diagnosis: Pyloric obstruction due to pyloric or duodenal ulcer. Therapy: Recommended immediate operation. Operative findings and procedures of surgeon (Dr. J. Munro): Old duodenal ulcer, gastro-enterostomy with infolding of ulcer. Complete recovery, no return of the symptoms up to the present, two and one-half years after. Able to eat everything.

Case 3. Miss M. P., age thirty-two. Father died of cancer at thirty-six. Grandmother died of cancer. Four or five years ago attack of indigestion with gas, sour stomach, but no severe pain and lasted only a few weeks. Three months ago sudden attack of pain two hours after dinner, lasted until next day, located in the epigastrium, relieved by belching gas. Two weeks later, second attack, lasted one day. Another in a week and another in a few days. Attacks come between meals. Appetite excellent. Not constipated up to three or four weeks ago. Physical examination: Stomach an inch above the umbilicus. Sigmoid slightly sensitive and thickened. Spasm and very sensitive at McBurney's point. Clinical diagnosis: Chronic appendicitis. Therapy: Made but one examination and ordered immediate laparotomy. Operative findings and procedures of surgeon (Dr. Maurice Richardson): Extensive cancer of the appendix and cecum which was completely removed with glands, including several feet of intestine. In about one year the weight, which was formerly 96 lb., increased to 121.

These three cases are the type which I would place in the first class of our classifications where there was no doubt whatever about the ordering of immediate laparotomy without proceeding to prolonged tests on medical treatment.

Case 4. Mr. I. C., age forty-six. Twelve years ago typhoid, had periodic headaches all his life. Four years ago first stomach symptoms, dull and burning pain in the epigastrium and right side and relieved by food. Constipated. Last six months progressively worse, has attacks nearly every day, has lost 10 lb. Physical examination: Weight 139, poorly nourished, lower border of stomach one inch above umbilicus, very sensitive in the right upper quadrant, very slightly sensitive over McBurney's point and no rigidity. As he did not improve after one week's test treatment, and as the pain was quite considerable, ordered laparotomy immediately. Clinical diagnosis: Chronic duodenal ulcer with possibility of cholecystitis with gallstones. Operative findings and procedures of surgeon: Extensive cholecystitis, thickened gall bladder with adhesions, old duodenal ulcer with extensive adhesions and chronic calcareous appendicitis. Surgeon removed appendix and drained gall bladder, but unfortunately did not perform gastro-enterostomy with occlusion of pylorus. Recovery from operation perfect, very few symptoms for six months, during which time he was eating everything. At the end of that time he came back to me with some of the same old pain, coming on two hours after eating and going through to the back. This was evidently the duodenal ulcer lighting up again. Therapy: Placed him on a smooth diet with bromide, magnesia and bismuth. In a month practically free from pain with only a little distress and gain of 10 lb. Recommended him to continue indefinitely upon smooth diet until ready to be operated second time.

Case 5. Mr. P. D., age thirty-four. Father died of throat trouble at fifty-six. Habits rather bad, drinks a good deal at times, smoked incessantly and had a chancer two years ago. Remembered having cramps in stomach fifteen years ago and has been bothered since then a little bit with indigestion. Bad attack of piles ten years ago. Two years ago bad attack of pain in stomach, vomited blood, remained in bed for four months, living on soup and soft diet. Lately has had some burning and pain three or four hours after meals, but this is easily relieved by soda. Constipated but no vomiting. Best weight 170, now 156 lb. Physical examination: Glands in the axilla, supraclavicular space and groins, abdomen not sensitive, stomach two inches below the umbilicus, splashing sounds. Stomach washing showed 200 ccm. with few pieces of vegetable residue. Therapy: Carlsbad salts in morning and smooth diet with lunches. Great improvement in a week and feels pretty well in a month.

Three months later had bad attack of diarrhea with enormous ulcerated hemorrhoids. Operation performed when both hemorrhoids and diarrhea were cured. Nine months later came back for belching and a little distress across stomach, very quickly relieved by smooth diet, olive oil, magnesium oxide, two hours after meals.

Two years later came back with history that he has felt pretty well during the interim, only recently patient was on alcoholic debauch and stomach symptoms have returned. Pain three or four hours after meals and wakes up about 2 A.M. with burning pain relieved by soda. Patient again easily relieved by smooth diet.

One year later again return of symptoms, even though has been very careful with diet. Stomach examination showed marked stasis with HCl, and blood was present in the stools. Clinical diagnosis: Pyloric ulcer; recommended immediate operation. Operative procedures and findings of surgeon (Dr. Wm. Adams): Old indurated ulcer firmly adherent, posterially situated at pylorus. Gastro-enterostomy and pylorectomy. Year after operation, patient is perfectly well, can eat everything.

This is a case where I should have insisted more strenously for operation several years before, yet at that time results were in Boston so discouraging, and the patient so completely relieved by medical treatment, that it was unduly delayed.

Case 6. Mr. R. F., age forty-eight. Father had same stomach trouble and died at seventy-four. Very irregular habits of life, has used much alcohol at times, smokes considerably. Stomach trouble for twenty-five years, consisting of burning pain and distress, always relieved by whiskey and soda up to three or four years ago, when consulted stomach specialist in another city, who made diagnosis of hyperacidity. Since then severe attacks from time to time, fairly well between times. Now bad attack for two weeks, not relieved by rectal feeding and rest in bed. Best weight 152, present weight 139. Well-built man, good color; stomach, lower border, two inches above umbilicus, no sensitive points. Contents contained ¼% HCl, but no residues. On lacto-farinaceous diet, bromide, alkalies and oil, was relieved in two or three days. In twenty-three days had gained 17 lb. Considered himself cured. My diagnosis then (six years ago) was hyperacidity and advised him to keep on smooth régime for fear of another attack. Four months after, patient consulted me again for oppressed distended

feeling. Put him back on diet and ordered more exercise. Six months after that, made me one more visit, when complained of pain across back, like a belt, and feeling tired, but had been working long hours (mental) without exercise and had drunk and smoked considerably. Again relieved. In two months mild attack of colitis relieved in a week by injections. Thus I saw him for one or two visits about every six months until three years ago, always being easily and rapidly relieved by medical treatment. Three years ago had severe attack of burning and distress and paroxysms of severe clutching pains, somewhat relieved by pressing on the abdomen, once or twice daily. No relief by treatment in a week, when ordered operation with the probable diagnosis of duodenal ulcer. As patient's family objected strenuously to operation, advised consultation of four, including both physicians and surgeons. At this consultation all consultants, even surgeon, were against operation except myself. In another consultation held one week later, two physicians were against operation and surgeon and myself for operation. A few days later family accepted operation. Operative procedures and findings of surgeon (Dr. Bottomley): Large indurated duodenal ulcer. Gastro-enterostomy. No symptoms whatever to the present time, three years after.

Case 7. Mr. G. F. Saw him but once in consultation. Age, forty-four. Father died of stomach trouble at sixty-seven, mother died of stomach trouble at sixty-three. Had typhoid fever at twenty-eight, stomach trouble for fifteen or twenty years. Alternating with some good months and poor months, attacks consist of burning, gas and pain; good appetite, not constipated. Seven years ago trouble became worse, but after treatment was all right for two or three years. Five months ago began again, very much worse, with great deal of pain coming on three or four hours after eating and at 1 A.M. Has been under treatment by local stomach specialist for two months on pure milk diet without relief, when left same and returned to his former doctor, who advised consultation. Physical examination: Best weight now 200. Stomach, lower border, two inches above umbilicus, no succussion, no sensitive areas, except over the sigmoid. Could feel indefinite resistance in region of pylorus. Stomach contents, 100 ccm. few coarse pieces bread, no mucus, no HCl. Blood present by benzidin. No macroscopic vegetable residue, but few vegetable fibers microscopically. Feces contained much occult blood. Diagnosis: Chronic indurated duodenal ulcer. Therapy: Gastro-enterostomy with closure of pylorus or resection. Operative procedures and findings of surgeon (Dr. Maurice Richardson): Chronic duodenal ulcer with large mass and induration about an inch beyond pylorus. Posterior gastro-enterostomy. Good recovery.

Case 8. Mrs. D. B., age forty-eight. Ten years ago, stomach out of order, distressed, fullness and gas, vomiting, with sour stomach, lasted about three weeks. Five years ago similar attack. Three weeks ago similar attack, yet the attending doctor thought she greatly exaggerated the pain, and the neurasthenic element was very strong. She was very constipated. Physical examination: Emaciated, rather pale, abdomen soft and patulous, could distinctly feel descending colon and upper sigmoid, which was thickened. Sensitive resistance under left ribs, could palpate right floating kidney, also appendix, which was quite sensitive; stomach, lower border, one inch above umbilicus. Rectal examination showed impacted large ball feces, size of baseball. Stomach contents: 50 ccm. clear, watery, with partly digested bread, HCl increased, very little mucus, few minute pieces lettuce from meal fourteen hours before. Leucocyte count, 5,000; x-ray, no stone in kidney or gall bladder. No improvement on test treatment for one week. Diagnosis: Indefinite, question of ulcer, cancer of stomach, cancer of splenic flexure of colon and chronic appendicitis. Therapy: Laparotomy with careful exploration. Operative findings and procedures of surgeon: Chronic indurated ulcer of the cardiac end of the stomach adherent and posterior. Gastro-enterostomy. Three months after operation, on the lacto-farinaceous diet, patient is quite comfortable, with no severe attack of pain, only a small amount of distress, gain in weight 5 lb. The surgical treatment of this case might have been greatly improved upon if surgeon had resected the ulcer according to the method of Mayo, because she is in danger of malignant degeneration. He also should have removed the appendix, as she is still quite sensitive in that region.

Case 9. Mrs. E. S., age twenty-seven. Family history and past history negative except an attack of appendicitis at fifteen years of age from which she recovered until four years ago. Sick headache and vomiting since childhood. Four years ago appendectomy and salpingectomy performed and curettage six months ago by surgeon, who refers her to me for stomach trouble. Stomach worse for last seven or eight months, much distress after eating and attacks of vomiting of very sour material three or four hours after eating. During last two weeks has vomited nearly everything. Best weight 180 four years ago; last September, 150; present weight, four months after same, 140. Physical examination: Sensitive over descending colon, moderately sensitive in the region of pylorus, and slightly sensitive over appendix scar. Could feel slight resistance in region of pylorus. Stomach washing, 150 ccm. Bread fairly well digested, no macroscopic vegetable residue, but few microscopic vegetable fibers, no free HCl. Stomach two inches above umbilicus. On first week of test treatment considerable improvement, no more vomiting, but second week pain and vomiting recurred, when I ordered laparotomy. Clinical diagnosis: Ulcer of the pylorus or erosions and pylorospasm, secondary to reflex from appendix adhesions. Operative findings and procedures of surgeon (Dr. Wm. Adams): No visible or palpable ulcer in stomach or duodenum. No inspection made for erosions. Great omentum tied into the appendix scar, causing considerable traction upon the stomach. Surgeon divided omentum. Complete recovery, no return of symptoms after one year. This patient probably had erosions and pylorospasm due to the interference with the motility of stomach, and when this interference was relieved, both these conditions ceased.

Case 10. Mr. E. H., thirty-six years of age. Family history negative, except constipation and nervousness seems to run in the family. Has had children's diseases and periodic headaches since childhood. Four months ago, after taking headache powders, felt pain in his side, which has not left him, and has had much burning, distress and pressure with no relief from treatment. Best weight, six months ago, 150; present weight, 132. Physical examination: Stomach, normal position; slightly sensitive under right ribs, also at McBurney's point. Rather rigid on right side, yet pain was so little, patient thought it was not much more than anywhere else. Diagnosis: Question of gastric ulcer or of erosions with chronic appendix. Sent him back to family doctor (in another city) with my test treatment, with suggestion to examine him again in a month. One month later immensely better, but not entirely well and advised the doctor that, in spite of improvement, thought he would need operation and if willing let me see him again. Came again in five months,

giving history of having been in fairly good condition in meantime, but had now return of trouble. At this time there was distinctly localized sensitive area in the epigastrium, besides slight tenderness at McBurney's point. Diagnosis: Gastric ulcer and chronic appendicitis. Therapy: Advised gastro-enterostomy with possible resection and closing of pylorus and appendectomy. Operative findings and procedures of surgeon: Chronic appendix and gastric ulcer; excised ulcer and removed appendix. One year after, patient again referred to me for return of stomach trouble; placed him on smooth diet, advised his physician that there was probably return of the ulceration and that he might have to be operated again in the future. Now, six months after this, have heard that he is doing very well, but must stick to smooth diet.

This case was badly managed from a surgical standpoint, as not only resection, but gastro-enterostomy, should have been performed, as gastric ulcers are sometimes multiple or at least the tendency exists to the formation of another if gastro-enterostomy is not performed.

Case 11. Mrs. J. G., age thirty-one. Family history negative, has had attacks of indigestion all her life, with occasionally diarrhea and in between times has suffered from burning and distress after meals. Examination shows stomach in normal position, but rather sensitive over the colon, ascending, transverse and descending, which with feces confirmed a low-grade colitis. Stomach washing: Negative, except increased HCl. Constipated between attacks. Soon and greatly relieved by smooth diet and proper treatment of the colon. For four years would return for treatment at intervals of about six months with history of acid stomach, nausea, vomiting and some pain in the lower bowel. Two years ago, appendix was felt sensitive and ordered operation which patient refused. Went away and never felt better in her life for one year. At last examination found her distinctly sensitive at the appendix and refused to treat her any further unless operated. Clinical diagnosis: Chronic appendicitis with secondary chronic non-mucous gastritis. Operative findings and procedures of surgeon (Dr. Wm. Adams): Old chronic appendix bound with adhesions. Appendectomy. Complete relief of all symptoms up to present time, six months after. Can now eat things that never could eat before.

Case 12. Mr. D. M. C., age fifty-five. Mother, stomach trouble all her life, also sister and one brother. Trouble started thirty years ago with heart-burn, feeling of pressure and pain and vomiting right after eating, but only periodic attacks. Ten or fifteen years ago attacks grew more frequent, one every two or three months, usually due to overloading the stomach or being tired. For last six months has had some trouble nearly all the time. Lately has a sharp pain in the lower left chest one or two hours after eating, relieved by food; appetite excellent, but afraid to eat. A little constipated, belches up sour material. Usually relieved by soda and hot water. During the last few weeks worse, symptoms come on at night one or two hours after retiring. Weight, six months ago 145, now 135 lb. Physical examination: Sparely built man, stomach one inch below the umbilicus, local sensitiveness at the epigastrium. Stomach contents: 200 ccm. bread well digested, free HCl 0.25%. Occult blood present and few microscopic vegetable fibers. On test treatment, enormous improvement, but not entirely well. Diagnosis: Gastric ulcer, situated near the pylorus. Therapy: Recommended laparotomy with pylorectomy if ulcer found. Patient's family refused operation, so patient has kept on my diet for one year, feels very much better, no night pain, only a little burning in day, relieved by medicine. Gain of weight, 15 lb.

This is rather an unfortunate decision of the family not to operate, and it is my belief that the ulcer is on the gastric side and very prone to undergo carcinomatous degeneration.

Case 13. Mr. J. K., age twenty-nine. Attack of headaches once monthly for ten to fifteen years. Five years ago, distressing pain in stomach and constipation, for which doctor gave him malt and cascara with relief. For the last few months has had much pain, distress and burning and knawing, relieved by food for two hours. His physician has cut down almost every article of diet without relief. Best weight six months ago, 146; two months ago, 138; now, 132. Stomach, lower border, one inch below umbilicus, very sensitive two inches above and one inch to the right of the umbilicus, slightly sensitive over cecum and sigmoid. Stomach contents, 300 ccm., normal HCl, bread well digested, some black pigment. Benzidin test positive. No vegetable residue. Test treatment for two weeks gave immense improvement. Diagnosis: Chronic gastric or duodenal ulcer probably pyloric. Therapy: Recommended operation as only chance of complete cure. Patient disinclined, therefore followed under his doctor's care the diet and treatment, but in three months had another most severe attack from which he recovered in a month and now feels (six months after) tolerably comfortable on lactaceous diet.

This case in a young man of twenty-nine is one which certainly should be operated on account of the great chances of complications later. The pylorus will close entirely in the space of a few months and years, then he will willingly come to operation if some intercurrent disease or complication does not carry him off before.

Case 14. Mr. P. M., age thirty-seven. Had dysentery and complication of diseases while fighting in Spanish War of 1898. His stomach out of order ever since. Everything burnt him, distressed and caused gas, but no sharp pain. Best weight before war, five years ago, 151; now 133. Physical examination: No sharp sensitiveness anywhere, just uncomfortable, with pressure on the epigastrium. Stomach contents showed increased HCl, otherwise normal. Lower border of stomach nearly to umbilicus. Reacted in two weeks perfectly to test treatment, had no further distress and gained 5 lb. In two months had gained 20 lb. and in two years 26 lb., which he has retained up to this time with complete freedom from stomach trouble five years after. Diagnosis: Chronic non-mucous gastritis with myasthenia, due to debility from fevers in tropics.

Case 15. Mr. J. H., age thirty-two. Family history negative. For last three months has suffered terribly from distress and gas in stomach with frequent vomiting of meals, has lost from 130 down to 95 lb. Has been under care of local stomach specialist, who has fed him chiefly on Mellin's Food. Patient is very nervous and introspective, convinced that he has a serious disease from which he will never be cured. The specialist told him it was chronic gastric catarrh, but he thought it cancer. Physical examination and gastric contents revealed absolutely nothing abnormal. Diagnosis: Neurasthenia with gastric focalization. Therapy: Ordered large meals of meat, vegetables and milk with meals, between meals, assured the patient that he had absoutely nothing organic and made him walk from two to three hours daily. He has never vomited again to this day, ten years after, and has gained steadily in weight, 60 lb., has remained always free from gastric symptoms with the exception of an attack three years ago, while under particular great nervous strain.

Case 16. Mrs. E. L., age sixty-one. Family history good, husband died of cancer of intestines two years before; has had stomach trouble for three years with distress, burning and little pain after meals, often nausea. Two weeks ago pain has been much worse, when she vomited one-half cup of clear red blood. Physical examination: Weight 142, heart somewhat enlarged, second aortic accentuated and rough, pulse irregular, temporal arteries tortuous. Stomach contents acid, but no free HCl, no retention, occult blood present. Urine gave from 20–30 casts per slide, a trace of albumin, quantity around 1,000 ccm. Smooth diet with test treatment caused entire relief of trouble. Diagnosis: Chronic non-mucous gastritis with erosions or ulcer, secondary to arteriosclerosis and chronic nephritis. Patient gained steadily on treatment and had been practically entirely free from any gastric symptoms and has gained greatly in strength up to the present, three years after.

REMARKS ON CASES.

Cases 1, 2, 3, 4, 5, 7, 8, 12, 13, illustrate those of Class 1, where operation should be immediately ordered and where it was obvious that medical treatment could do no permanent good. Case 6 in its earliest stages, Cases 9, 10 and 11 in their earlier stages, Case 11 in its earlier stages, illustrate the type where operation should be thought of and in the present light of our knowledge advised to the patient.

Cases 14, 15, 16 illustrate cases where surgery is not in question.

Case 16 might have been thought operative by some surgeons, yet, in view of the serious arteriosclerotic changes and chronic Bright's, and also of the great immediate relief on the test treatment, and considering the age, it seemed prudent to advise against such measures. This was substantiated by the future history.

## Clinical Department.

### SUDDEN DEATH FOLLOWING A PROPHYLACTIC DOSE OF DIPHTHERIA ANTITOXIN. AUTOPSY REVEALS STATUS LYMPHATICUS.

BY SYLVESTER F. MC KEEN, M.D., ALLSTON, MASS.

The extreme rarity of the above occurrence induces the writer to report the following case:

In the patient's family, a servant, with a history of sore throat for several days, was found to have diphtheria and was removed to the hospital. The other members of the household had been pretty thoroughly exposed to infection, and it was, therefore, deemed advisable to give them all prophylactic doses of antitoxin. Consequently 500 units were administered to a second servant, also to the mother and sister of the patient. The latter, a girl of seventeen, was at high school, and it was arranged that she should call at the writer's office on her way home, which she did. Casual examination showed her to be well-developed and nourished, but of a pasty complexion. As in the case of the others, 500 units of state antitoxin, with the usual aseptic precautions, were injected deep into the deltoid muscle. Following this procedure, the nose and throat were explored to find a possible cause for a sort of chronic coryza. The nasal passages were found to be unobstructed, and the mucous membrane practically normal. There were some adenoids and very slightly enlarged tonsils. After this examination the patient sneezed a number of times, but otherwise felt all right and seemed not at all nervous or disturbed. She left the office with her sister, to whom she complained immediately on reaching the sidewalk of a "stinging all over." They at once turned back to consult the writer. The patient grew rapidly weaker, collapsed on the steps, was at once carried in and laid on the floor. Already she was completely unconscious, cyanotic and pulseless; breathing was difficult, and froth and serous fluid ran from the nose and mouth. There were no convulsive movements. The body was limp; the face looked swollen; the corneal reflex was absent. In spite of artificial respiration, rhythmic traction of the tongue, and hypodermics of strychnia, death rapidly ensued. Less than fifteen minutes had elapsed from the time the antitoxin was injected until the patient was dead.

The autopsy (performed by medical examiner Dr. W. H. Watters) showed a persistent thymus gland, weighing approximately 25 gm., and its left lobe extending to about the level of the third cartilage; numerous enlarged lymph nodes in the mesentery, swollen Peyer's patches, an enlarged spleen and small adenoids. The heart was normal. The lungs were negative and showed very little edema. The kidneys and other organs appeared normal. The anatomical diagnosis was, therefore, *status lymphaticus*.

On inquiring further into the history of the case, the following facts were elicited: The father died of valvular heart disease. The mother is living and robust, but suffers from hay fever and chronic rhinitis (no untoward results followed her dose of antitoxin). The only sister is healthy. The patient had had measles and scarlet fever. For several years (although not lately) she had suffered off and on from attacks of asthma ("thymic asthma"?). For this condition she was treated by a physician, who found at that time a very slight but persistent trace of albumen and a leucocytosis. He advised removal of adenoids and tonsils, but operation was refused (perhaps fortunately!). It was said that laughing often brought on a wheezing attack. For some time past she was troubled by a slight chronic watery rhinitis (vasomotor?). She was always pale, although the Tallquist test a few months ago showed 100% hemoglobin.

## Reports of Societies.

### BOSTON MEDICAL LIBRARY IN CONJUNCTION WITH THE SUFFOLK DISTRICT MEDICAL SOCIETY.

Meeting of Jan. 18, 1911.

Dr. Wm. J. Mayo, of Rochester, Minn., read a paper on

SOME OBSERVATIONS ON THE DISORDERS OF THE STOMACH AND DUODENUM, WITH ESPECIAL REFERENCE TO ULCERS.[1]

DISCUSSION.

Dr. F. C. Shattuck: In the first place, I wish to express the obligation every physician must feel to modern surgery, which, among many lessons, has taught him much with regard to the pathology, symptomatology and treatment of peptic ulcers. Among

[1] See Journal, p. 477.

surgeons, none has contributed more than our guest of the evening, Dr. Mayo.

Not knowing exactly what Dr. Mayo was going to say, and wishing to state my position on this important matter clearly, I have put it in writing. If all surgeons were Mayos, with a Rochester hospital organization, I might modify my views in some respects.

Surgery has developed and is constantly adding to our knowledge of the "Pathology of the Living," as Moynihan well puts it, which varies in important respects from that of the dead. Dr. Holmes compared an autopsy to the inspection of the fireworks the morning after the Fourth of July. The abdominal surgeon studies them in action. The Roman augurs forecasted the future by the inspection of the entrails of slain animals. The modern surgeon not only forecasts, but radically modifies, the future through the inspection of the entrails of living men.

It seems to be a law of progress that some individuals must suffer, must be sacrificed, for the benefit of the race as a whole. This law, if such it be, has been exemplified in gastric surgery. We must not allow our sympathy for the individual to paralyze our efforts for the race. At the same time, we must carefully, critically, prayerfully, consider each step toward progress — aim to achieve the greatest possible good with the least concomitant evil. A more conscientious man than Beau Brummel would not have needed to fill a basket with failures before achieving a perfect necktie. Waste in its simplest form is wrong. Needless waste of human life, needless addition to human suffering, is criminal.

As far as I remember, Joslin and Greenough were the first to show in adequate figures how many cases of peptic ulcer relapse, or even keep their symptoms, after treatment in hospital. Could an equally broad study in private cases have been made, covering the same period, I believe that decidedly better results would have been shown. I also believe that results are better to-day in both classes of cases, for medical treatment has not stood still, and, above all, the importance of prolonged dietary restriction is far better understood. This is, and must continue to be, more difficult to secure in hospital than in private cases.

As I look back over thirty-five years of practice, both hospital and private, case after case comes into my mind of complete and permanent recovery from peptic ulcer, gastric and duodenal alike. Many of these cases to-day coming first into the hands of the surgeon would be operated upon, some of them coming first into the hands of a physician. There has been and is error on both sides. Some physicians are too conservative; some surgeons too radical. Some physicians do not seem to understand and carry out the best medical treatment; some surgeons are less experienced and skillful than others. But physicians and surgeons are, I believe, getting together and finding out when, where and how to operate. As yet the end results of surgery are not comparable in time to those of medicine; operative interference is still too young.

In view of the demonstrated tolerance of the abdomen to all sorts of clean interference, and of the fact that medical treatment left a considerable proportion of cases partially or wholly unrelieved, it was only natural that the surgeon should try his hand, even that some enthusiasts should maintain and act upon the opinion that every case of dyspepsia which does not promptly yield to medical treatment should be operated on. The time limit of medical treatment has been stated as a few weeks. That the ardor of the chase has led to unnecessary and, therefore, unwise operations, I think no one can question. To-day the leaders pick their operative cases with more care and judgment and have acquired great skill. Many followers, however, have neither learned the limitations of operative usefulness nor acquired the operative skill which must be therewith combined to minimize the dangers of plastic operations on the stomach. I have been forced to the conviction that even gastro-enterostomy is a major operation, and that the 2% to 5% mortality of A and B may grow to 10% and 15% in the hands of M or N, and even higher yet in the hands of Y and Z. It seems to me that no surgeon, save in an emergency, should undertake stomach surgery in man before he has acquired considerable skill on animals.

Much of what I have said may be trite, may be even Rooseveltian platitude, but the physician faces, it seems to me, a serious responsibility in advising gastro-enterostomy by the average surgeon.

In the past year I have had personally to do with seven cases of stomach surgery. All seemed to be fair risks. In none was there needless delay before operation. Two died within a week, one within two weeks of operation. All three were gastro-enterostomies for benign diseases. One died of general peritonitis. The second had a previous gastro-enterostomy five years before, with freedom from symptoms for three years following. The symptoms then gradually returned. At the second operation it was found that the opening made five years before had closed and the pylorus was stenosed. Another gastro-enterostomy was done. He died of bronchopneumonia. The third died of empyema, clearly, I think, of subdiaphragmatic origin.

In the past three months I have had in my hospital wards three cases which in my judgment never should have been operated on. One had gastro-enterostomy in Edinburgh in July, 1909. Nothing but slight paleness and induration of the duodenum near the pylorus was found; the existence of ulcer was not considered certain. No abatement of his symptoms followed. Aug. 4, 1910, he was explored at the Massachusetts General Hospital. Fourteen inches of the jejunum was found protruding through the hole in the mesocolon made at operation No. 1. Aug. 20 he was opened again for symptoms suggestive of perforation. None was found. The omentum was somewhat tangled about the colon. Sept. 10 he was transferred to the medical ward, and in the next five weeks lost all symptoms, and gained 14 lb. in weight. Several weeks later he reported himself as doing well. The evidence seems clear enough that proper medical treatment at first would have saved him three operations and a year's discomfort.

In the second case, also of gastro-enterostomy, done in a metropolitan hospital, four subsequent operations for adhesions and one thing and another were performed, and the sixth was done by Dr. F. T. Murphy, who did his best to restore the natural condition.

In the third case Dr. Codman has made the same effort.

A recent case has emphasized the lesson that even when stenosis exists, operation is not always called for. A middle-aged man entered my ward last summer. The records showed that he had been in the hospital under my care in 1898, with moderate dilatation, capacity 2,900 ccm., due, as was thought, to duodenal ulcer and pyloric stenosis. He improved under treatment; was discharged; washed his stomach daily before breakfast; every second day; then less frequently and finally ceased doing so. He was practically well, and worked steadily, until he got to drinking hard, and for some months before entrance in 1910 he had much discomfort and several times vomited small quantities of blood. Under diet and lavage he got

better, though the stomach did not empty itself. He was discharged about a month ago, having gained 29 lb. in eight weeks. He now reports that he has no residue in the morning, no discomfort, and has gained 7 lb. more since his discharge. Until he reports next he is to wash his stomach only every other day.[3]

Among the end results of gastro-enterostomy may be mentioned vicious circle; tormenting adhesions; closure of opening and return of symptoms; the formation of a new ulcer at the seat of entrance of food into the intestine through the new opening. These presuppose recovery from the operation.

Moynihan[3] says: "The arguments in favor of the surgical treatment of all chronic ulcers of the stomach and duodenum are already sufficiently strong. No other treatment than that which the surgeon offers can do more than relieve the patient to some extent of his sufferings when once a chronic ulcer is established in the stomach; for if the ulcer lying near the pylorus heals, its cicatrix, while steadily undergoing contraction, is causing a constant mechanical interference with the movement of the stomach."

With the best will in the world to keep an open mind, I must protest against such a statement as this, which runs so counter to my personal experience, and also as I believe to that of physicians in general.

Since writing the above two more cases showing the possible end results of abdominal surgery have come into my wards. One was a woman whose abdomen was explored in July, 1910, to see whether she had cancer. None was found, but an inactive appendix was removed. She entered my ward about Jan. 1, with vague abdominal symptoms, of which diarrhea and discomfort were the most prominent. The afternoon preceding the reading of Dr. Mayo's paper her condition suddenly became grave; a surgical consultation was held that evening; a probable diagnosis of peritonitis was made, but operation not deemed advisable. She died the next morning, and the autopsy showed a chronic volvulus about an adhesion resulting from her operation of last summer.

The second case is that of a man on whom posterior gastro-enterostomy was done within a year for benign pyloric stenosis and stasis. Temporary relief followed, but recently the symptoms have all returned in full intensity. The capacity of his stomach and stasis are both no less than before the operation.[4]

Dr. H. F. Hewes: The record of work upon duodenal ulcer which Dr. Mayo has given us is of supreme interest to the practitioner of internal medicine, in that the results which he has obtained in the application of surgery as a therapeutic agent for the treatment of this disease give promise of the advent of a means of cure of a condition hitherto more or less untractable as regards permanent cure in the hands of internal medicine.

My experience with duodenal ulcer of the type expressly specified by Dr. Mayo as demanding surgical interference, chronic ulcer causing mechanical obstruction of the duodenum or pylorus, has indicated to me that it is not curable by therapeutic measures in the possession of medicine other than surgical measures.

The condition can be relieved for the time by measures of rest and diet. Patients may appear for periods from one to three or four years to be absolutely cured, but they seldom continue without occasional recurrences at best, and often very temporary periods of relief from symptoms are the best result that can be secured.

Such being the case, any measure which offers a permanent cure of this condition must be hailed with enthusiasm by the medical practitioner. Dr. Mayo's records would suggest that such a measure has been found.

If surgery can perfect itself generally so that so good a percentage of good results can be obtained by its application to this condition as Dr. Mayo's records indicate, the application of this therapeutic method to the treatment of this disease will become, it seems to me, imperative.

There is, of course, at the present time some uncertainty as regards the permanence of the cures obtained under the application of surgery. The period of a general application of this method is a recent one and sufficient time has not elapsed after operation, in many of the cases recorded as cures, to prove absolute cure. I have seen cases where surgical treatment appeared to be successful recur after a period of three years. If the cures are not permanent they are in many cases not better than those accomplished by the measures of internal medicine. But it is my opinion that our knowledge of medicine at the present time indicates the trial of surgery in all aggravated cases of their condition, cases in which definite obstruction of the duodenum or pylorus is demonstrable.

We have all had some bad results in our surgical cases, but I feel that these cases are intractable to other measures and that surgery is the rational means of cure, and that if it is given a chance to perfect itself along this line, it will finally achieve good results generally. I am not sure that the present operation is the best one, but that operative interference of some kind offers our best hope of cure I feel assured.

Having for some time been of this opinion that surgery is indicated in conditions of duodenal ulcer, at least in cases of this condition of the type described, I have been making a special study of the means of diagnosis of this condition. What I have endeavored to arrive at is the establishment of a knowledge of a symptom complex of duodenal ulcer, the determination of which in a case will enable the physician to decide definitely as to diagnosis and whether it is a type of case where surgery is indicated, for it is not yet necessarily assured that surgery is to be used in all cases of this condition.

There is, it seems to me, one definite clinical sign of this character, such sign being the existence of demonstrable stasis in the stomach. Where symptoms suggesting the possibility of duodenal ulcer are present in any case, the finding of stasis, that is, the presence of food remains or sarcinæ in the stomach at a period when the stomach, if mechanical conditions are normal, should contain no such residue, is a definite confirmation of diagnosis and an indication for operation.

It is true that this phenomenon of stasis may occur as the result of other conditions, as, for example, cancer of the stomach or ulcer of the stomach involving the pylorus, but operation is indicated in these cases as well as in that of duodenal ulcer. The rule may be stated as follows: Where stasis is demonstrable by the proper method of investigation, operation is indicated. Where with such a symptom cancer or gastric ulcer can be excluded, a diagnosis of duodenal ulcer is indicated.

I do not mean to say that reliance on this major sign interpreted with the above reservations can be depended upon for the absolute diagnosis or exclusion of duodenal ulcer. Cases of duodenal ulcer may exist in which this sign is not present at the time of investi-

[3] April 1 he reports that he has washed his stomach before breakfast twice a week, getting no residue. He is at work and has no symptoms.

[3] "The Pathology of the Living, and other essays," p. 24.

[4] The x-ray showed that the artificial opening is patent. Under medical treatment he gained 18 lb. in six weeks and was discharged free from symptoms although the stomach capacity remained 2,500 to 3,000 ccm.

gation. But if the sign is present, we can be assured of our diagnosis and proceed to operation.

If it is not present and we have other evidences of the ulcer, as blood in the feces, hypersecretion, subjective symptoms usually associated with this condition, we may or may not feel capable of a definite diagnosis, and even if assured, may not have indications for operation.

With the sign, we can be assured, with the reservations above noted. The presence of blood in the feces, together with this sign, gives additional confirmation of our diagnosis. The stasis which is found in duodenal ulcer may be either macroscopic or purely microscopic.

In most conditions of stasis as generally described a residue of food is found present in the stomach after a twelve hours' fast, sufficient to give a large macroscopic residue, recognizable as food.

In stasis from duodenal ulcer this condition may or may not exist. In some cases we find only a microscopic stasis. The quantity of residue in the stomach may amount to but 20 or 30 ccm., a quantity of fluid sometimes found in normal conditions, or it may amount to 100 to 200 ccm., but consist almost entirely of fluid and suggesting hypersecretion rather than stasis by its macroscopic appearance.

Under the microscope, however, a greater number of food particles will be found present than are ever present in the normal or in conditions other than stasis. Sarcinæ may be found in such conditions and are absolute evidence of stasis.

This microscopic stasis found in duodenal ulcer has not been given sufficient attention. I have seen many cases of this condition where a record of no stasis was made, and a doubt as to diagnosis expressed, because no macroscopic stasis was found, which showed good evidence of stasis by microscopic examination, and which proved to be cases of duodenal ulcer.

The recognition of microscopic stasis necessitates training. A few food particles may be found even in the residue obtained from the normal stomach. But the existence of a relatively greater amount of food or the sarcinæ can easily be determined by the expert.

It is a characteristic of some cases of duodenal ulcer that though they show such stasis on some examinations, they do not do so on all occasions. But by persistent study you can make your diagnosis. The claims that all cases with persistent symptoms of hypersecretion, of symptoms of relief, of gnawing in the stomach by food, of acid eructations or regurgitations, are cases of duodenal ulcer, must be set down as not proven. That these symptoms are frequently the associate of this condition is true. But all subjective symptoms are misleading in a subject with so highly organized a nervous system as the human subject. We must in these cases seek for definite objective signs, as stasis or hypersecretion as demonstrated by the examination of the stomach contents. This remark is intended for the surgeon as well as the general practitioner. That we shall never operate without these signs, or evidence of persistently recurring hemorrhages, I do not say, but we should go very slowly in such cases of suspected duodenal ulcer. Where the signs are present, we should operate.

DR. F. B. LUND: I well remember about ten years ago when Dr. Mayo came to Boston and read to us an interesting and stimulating paper on surgery of the stomach, and I cannot help realizing now how much our knowledge of the stomach surgery has advanced during that period and what a great share the work of Dr. Mayo and his associates has had in the making of modern progress in this department of surgery.

In 1899, I had the honor of reporting one of the earliest cases of perforating ulcer of the stomach to be successfully operated upon in Boston, and ever since then my interest in the subject has been great and continuous. When one has listened to a paper such as that of Dr. Mayo describing the experience based on such a very large number of cases, it is rather hard to have to admit that one is as yet but a beginner in the surgery of the stomach, but that is what I am compelled to do. In view of some of Dr. Shattuck's remarks, however, I think that it is only fair that I relate my own personal experience. When I began to perform gastro-enterostomy for ulcer of the stomach at the City Hospital, I could not say, as Moynihan has said some years ago, in reporting 100 successful cases without a death, "I made no mistakes, for fortunately others had made the mistakes for me," and I had to learn to do the operation rightly. I began by losing two cases from vicious circle, and of the twenty-three cases of gastro-enterostomy or excision for chronic ulcer of the stomach, including cases of hemorrhage, but not of perforation, which I have done up to date at the City Hospital, six died. Most of these were turned over to the surgeon very late, and much weakened by starvation and often hemorrhage. In the last five years, however, in private practice I have now performed 33 operations, including gastro-enterostomies and excisions for chronic ulcer of the stomach, with one death, or less than 3%, which is not such a bad record. I have done, in hospital and in private, 10 partial gastrectomies for carcinoma of the stomach with 2 deaths, or 20%. The first one, operated eight years ago, died because of faulty technic. The other, also an early case, died from injudicious attempt to remove a large amount of involved glands.

I have heard from 16 of the ulcer cases, 13 of whom are perfectly well in every way and all of whom are extremely grateful for restoration of health. Three are in fair condition and the remainder I have not been able to get in communication with.

In regard to operating upon these cases. Our patients at the City Hospital belong to the laboring class. In order to earn their living they are obliged to eat real food and do good, hard work. Undoubtedly, Dr. Shattuck's patients belong to the wealthy class and find it feasible to spend long periods at sanitariums at great expense and to undergo irksome and long-continued treatment with the stomach tube, meanwhile living in invalidism on a liquid diet. Working people who have families to support would almost rather take the risk of a very dangerous operation than undergo such treatment; in fact, they cannot do it. Personally, I feel that I would rather submit to one, two or even three laparotomies than to be obliged to have a stomach tube passed every other day. I believe, as a result of my own experience, that gastro-enterostomy is not a dangerous operation and I know that it restores to health and usefulness in the community a large number of miserable, dyspeptic invalids. The effects which I have seen in my own cases have been simply astonishing.

DR. JOHN T. BOTTOMLEY: The pleasure I have in taking part in the discussion of the evening is mingled with a feeling of great regret in that that skillful surgeon and splendid gentleman, my late chief and friend, Dr. John C. Munro, is not here with us to speak of the work at the Carney Hospital, so much of which was done by his hand. I stand in his place most unwillingly and most unworthily.

I have listened with interest to what our medical friends have said this evening. I realize fully that every case of dyspepsia, every case of gastric hemorrhage, every case of gastric ulcer, does not fall within the province of the surgeon. But I am equally sure that, were every internist to stand by the operating table of the surgeon and to see the living pathology of many gastric and duodenal diseases, he could not

but be convinced that medicine would be powerless to aid the sufferer, and that to many of the conditions surgery holds out the only hope of relief.

However, not all internists take the same ground as Dr. Shattuck. Let me read briefly from an article just published [5] by Dr. J. N. Hall, of Denver.

These are striking words, coming as they do from an internist:

"In deciding on the advisability of medical or surgical treatment in any given case of peptic ulcer which has attained a sufficient degree of severity to lead to the consideration of the latter method, we may state the advantages of medical treatment about as follows:

"1. Avoidance of immediate operative and anesthetic dangers.

"2. Avoidance of possible vicious circle, recurrence of jejunal ulcer, ventral hernia, post-operative adhesions, etc.

"Against these advantages we should set the following dangers:

"1. Likelihood of failure of medical treatment.

"2. At least an even chance that the patient will relapse if temporarily cured.

"3. Dangers of development of pyloric stenosis through presence of an active ulcer at that point, or spasm caused by its irritation, or cicatricial stenosis following its healing.

"4. Danger of hemorrhage or acute perforation.

"5. Danger of the development of cancer on the base of the ulcer (68% of the pylori excised by the Mayos for cancer showed origin in an ulcer, while 71% of those excised under the belief that they were cases of ulcer showed cancerous changes beginning [Wilson]).

"Nearly 10% of our patients operated on showed cancer.

"6. Danger of adhesions, which cripple the action of the stomach, obstruct the gall passages, produce serious pain and often require late operation.

"7. Dangers from a troop of late complications of slowly developing perforation, amongst which I have encountered peritonitis, subphrenic abscess, empyema, pyopneumothorax, pneumonia, perforation through the lung, septic pericarditis, mediastinitis, pancreatitis, suppurative processes about the liver and gall ducts, and general sepsis. Unfortunately many cases are reported under such headings without a recognition of the origin of the process in a peptic ulcer.

"8. The development of such a condition of anemia and malnutrition from the crippling of the digestive apparatus as to lead to neurasthenia, hysteria and various functional nervous diseases, or to pave the way for an easy and often fatal infection of the tubercle bacillus, pneumococcus, influenza bacillus, etc."

These words state the question fairly. That there is danger to the patient in the operation, no surgeon will deny. That there is necessarily great danger, Dr. Mayo's statistics disprove.

At the Carney we have operated on 45 cases of duodenal ulcer with 3 deaths. In these 3 deaths is included a death from hemorrhage and a death from abscess of the lung two months after operation. Reports from 25 of these cases have recently been received and 28 represent themselves as entirely well at periods of from two months to five years after operation.

Gastro-enterostomy for benign disease of the pylorus does not carry a high mortality. I have not had sufficient time to collect my statistics, but a hurried compilation of the last 100 gastro-enterostomies done at the Carney Hospital for benign disease of the stomach shows 8 deaths. Unfortunately I had not time to root out cases of benign gastric disease only. These 8 deaths included those which followed cases of perforation and also cases in which operation on other organs than the stomach were done at the same sitting.

I believe it important that the general practitioner should carry away from this meeting one thing at least, and that is, that the diagnosis of ulcer of the stomach or of the duodeneum can be made from the clinical history alone, and that chemical tests are only valuable corroborative signs.

[5] Jour. Am. Med. Asso., Jan. 14, 1911.

## Book Reviews.

*The Prescribing of Spectacles.* By Archibald Stanley Percival, M.A., M.B., B.C. Cantab., Senior Surgeon, Northumberland and Durham Eye Infirmary. New York: William Wood & Co.

This little book of 160 pages is closely packed with facts and formulas. The author gives much space to mathematical optics as applied to detecting and correcting errors of refraction and muscular imbalance, but every part of the book is clear and interesting, and many suggestions are original and useful in prescribing spectacles. To read the book carefully means some work, but it is worth it.

*Practical Dietetics, with Reference to Diet in Disease.* By Alida Frances Pattee. Sixth edition, revised and enlarged. Mount Vernon, N. Y.: A. F. Pattee. 1910.

This sixth edition of a book that first appeared in 1903 may be taken as evidence that the work has met with fairly extensive appreciation and use. The introduction to the present volume shows in outline the requirements in dietetics of various state boards of examiners of nurses. Considerable matter has been added to the text of the original, and the caloric value of each recipe is stated. The book should continue its usefulness, not only as a practical treatise on dietetics for nurses, but as a domestic culinary guide for diet in health as well as in sickness.

*Transactions of the Fourth International Sanitary Conference of the American Republics.* Published and distributed under the auspices of the Pan-American Union, Washington, D. C. 1910.

This somewhat belated report of the proceedings of the Fourth International Sanitary Convention, held in San José, Costa Rica, Dec. 25, 1909, to to Jan. 3, 1910, contains complete account of the program of meetings and of the discussion at the several sessions. An appendix contains instructive reports of the various committees and of the delegations from the republics represented, namely, Chile, Colombia, Costa Rica, Cuba, El Salvador, Guatemala, Honduras, Mexico, Panama, Venezuela and the United States. The volume contains a large amount of valuable information, particularly with regard to tropical sanitation, hygiene and medical prophylaxis.

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## LIMITATION OF THE UNDESIRABLE.

AN editorial on "Eugenics and Unemployment," in the issue of the *British Medical Journal* for March 25, discusses afresh a problem that is pressing for consideration in every civilized country. In England, the steady increase of the unemployable, and the steady decrease of the desirable, elements of population already constitute a condition of serious national economic importance. Efforts at remedy, it is pointed out, must be twofold: Encouragement of procreation among the fit, and prevention of propagation among the unfit. It is hard to say which is the more difficult to accomplish. The British income tax at present provides a certain exemption in proportion to the number of children under age in each family, but this measure would seem of rather negative value. No positive propositions of subsidization, such as we have recently noted in France and in Chicago, have as yet been made in England. The two methods suggested for limiting the undesirable are segregation and asexualization. The latter this editorial rejects as impracticable under the present status of public feeling. Segregation it considers more feasible, though enormously expensive and, as is suggested, fully as likely to lead to sexual crime, perversion and irresponsibility as asexualization by vasectomy. It is interesting that these conclusions are substantially the same as those recently reached by the Massachusetts Commission, upon whose report we commented in the issue of the JOURNAL for March 16.

The writer in the *British Medical Journal* considers that "the present position is due to the fact that by interference with the law of natural selection there have been brought about quite unnatural social conditions." It hardly seems that this is an entirely adequate explanation. Bad though conditions may be, they are probably not worse in degree, though different in kind, than what have often existed before. It is at least questionable whether the suggested measures, even if carried out, would materially relieve the situation. Probably in the long run natural process can be trusted to settle the problems of humanity as it has settled them for centuries, generally for the best, though of course vast personal suffering may be involved and civilizations perish in the accomplishment. Nevertheless, discussion of such questions from every point of view is eminently desirable, for man, by taking thought, may diminish the waste and destruction of natural process, even though he cannot hasten its operation.

## SOME PROPOSED ILLINOIS LEGISLATION.

THE monthly bulletin for March of the Illinois State Board of Health is "devcted to bills deemed of particular interest to the members of the medical profession," now pending before the legislature of that state. In view of much modern discussion of eugenics, two of these seem of special importance.

The first provides various amendments to the existing marriage laws of Illinois, which have been in force in their present form since 1874. One of these amendments requires that every application for a marriage license "shall state under oath whether either of the parties is an imbecile, epileptic, of unsound mind, or under conservatorship, and whether either applicant is or has been within five years an inmate of any insane asylum or poorhouse, and whether either of the contracting parties is afflicted with tuberculosis, syphilis or other transmissible diseases, and such application shall be accompanied by a certificate of a reputable practicing physician that the parties contemplating marriage are in sound bodily health and free from any recognizable indications of transmissible disease; and no such license shall be issued if it shall appear from such certificate, or otherwise, that either of the parties is deficient in any of the requirements enumerated." The intent of this proposed law seems good. Evasion of it would still be possible, and would probably occur; but the measure, which further provides a penalty for the fraudulent issuing of a health certificate, at least places the responsibility where it belongs, — with the medical profession.

"We must bear all. O hard condition,
Twin-born with greatness!"

This measure seems a wise and practicable step towards positive eugenics.

The second bill of importance to which we have referred is one relative to the sterilization of criminals, idiots and others. After a brief description of the operations of vasectomy and vaginal resection of the Fallopian tubes, the measure provides that all habitual criminals, idiots, feeble-minded, and imbeciles, inmates of public institutions, shall be examined by competent surgeons to determine their physical and mental condition and to decide whether it be improper and inadvisable to allow them to procreate. The result of such examination is to be reported "to the circuit court or any court of competent jurisdiction in and for the district from which such inmate, or inmates, has been committed to such institution or institutions. The court shall thereupon hear and determine the matter and if satisfied that the purposes of this act will be executed by such order shall adjudge that such operation shall be performed." Illegal sterilization of any person is made punishable by a fine not exceeding $1,000, or imprisonment for one year, or both.

Apart from the question whether Fallopian resection — in this act incorrectly termed oöphorectomy — is a really efficient means of sterilization, the advisability of such a measure is at least still open to discussion. Similar laws have already been adopted in California, Indiana and Connecticut, and thus far over 1,000 men and 20 women have been sterilized under their provisions. Except in the last-named state, public opinion in the conservative East seems at present generally opposed to such procedures, as it is in England. Segregation of defectives is the alternative, and though more expensive, is probably now more practicable and ultimately as efficacious. It is, nevertheless, desirable to observe such legislation as that proposed in Illinois, and to study the actual working of the experiment in those states by which it is made.

## THE PREVENTION OF VIOLENT DEATH FROM FIRE.

Naturally, all sorts of investigations are being made as to the causes of the appalling loss of life in the recent Washington Place fire in New York. It will eventually be found, no doubt, that the responsibility will have to be divided in several directions, but it seems probable that the chief cause was the lack of a fire drill among the factory employees. It appears that the means for extinguishing fire immediately at hand were not resorted to, and the developments of the investigations conducted by Fire Marshal Beers and the district attorney tend to show that the great loss of life was due not so much to lack of escapes as to extreme phases of panic.

Since this fire occurred, the value of the fire drill has again been demonstrated, in the case of two schools where there were fires: One a public school in the Bronx, and the other a large parochial school in Long Island City, Borough of Queens. In each instance the children marched out in perfect order, and the building was very promptly vacated. Some time ago a bill was introduced at Albany making fire drills obligatory in all large factories and stores, but it has never been made a law. Superintendent Maxwell, of the Board of Education, has suggested that employers of labor, particularly those who have lofts where girls work, should engage some of the younger public school principals, who are accustomed to managing the fire drills of large bodies of children, to give instructions in such drills. In speaking of this feature in his department, Mr. Maxwell says: "We have been insistent in carrying out the law which requires at least two fire drills in every month at each school. I receive reports as to the dates on which they are given and the time occupied in emptying the building completely, and if in any instance this requires more than three minutes, an inquiry is instituted. When it is considered that we have hundreds of schools with a capacity of more than 1,000 pupils, and many which have 1,500, 2,000 and even 3,000, while there is one with nearly 6,000, the importance of the subject cannot be overestimated. Since the institution of the drills there has never been a child injured in the slightest degree in a fire, though we have had many fires, two of them very serious. As a result of one of these, the building had to be rebuilt entirely; yet in this, as in all other cases, the children got out rapidly and in perfect order."

It has also been suggested that firemen who have been retired on pensions should be put in charge of the work of instituting fire drills. This latter suggestion may perhaps be the better one. H. F. J. Porter, an engineer who has been engaged for the past ten years in factory work, has pointed out that Mr. Maxwell's statement to the manufacturers may be misleading, in that it allows them to suppose that the school principals are educated along the lines of developing fire drills in buildings not constructed favorably for the purpose, and where the occupants are not of the

character of those with whom they have been accustomed to deal. Consequently, much harm might be done through having persons in charge who are not equipped to cope with existing conditions, upon whose drill the employer will depend, and find it at the critical moment inadequate and useless. Mr. Porter states that in every instance where he has installed fire drills in factories he has found it necessary to make one or more changes in the construction of the building in order that it might be adapted to a successful drill. He has always found it necessary also to install a fire alarm system which will notify the occupants exactly where the fire is located, as well as to develop and instruct a corps of fire fighters to extinguish the fire in its incipiency, if possible. The active work of instructing the operatives, he says, is a very simple matter.

The fund collected for the sufferers from the Washington Place fire having amounted to nearly $66,000, the Red Cross Emergency Relief Committee announced on March 31 that as this sum was deemed sufficient for its purposes, it would make no further appeal for contributions. At the same time it issued a statement which was in part as follows: "Every family has been visited and all emergent needs met. In a number of instances relief has been declined on the ground that the family resources were sufficient. The committee has respected and honored such self-reliance; nor has it obtruded relief when relatives or friends claimed a preferential right to bestow it. The gratifying and impressive feature of the contributions is the large number of small gifts, coming evidently from people of modest means, many of them apparently workmen, and the number of collective contributions from employees of this or that firm or company, not to speak of contributions from children." Since then the relief fund has increased to nearly $75,000.

## ASKLEPIOS AND THE GOOSE.

THE goose, and the cock, as is well known, were in antique times held sacred to Asklepios; and at various temples of that deity have been discovered statuettes representing a child carrying or strangling a goose. One of these statues from the temple at Cos is described in the recently discovered poems of Herondas. Another is mentioned by Pliny. In a recent number of the *Archeological Journal of Athens*, quoted in the *The Lancet* for March 11, M. Svoronos advances the ingenious theory that the goose in religious mythology symbolized pestilential pools and marshes, and that in these statuettes the child represents Ianiscos, the youngest son of Asklepios; and that when the boy is strangling the goose, the group typifies the healing of fevers by Asklepios and his family. In other groups, similarly, Asklepios himself, or one of his daughters, is depicted with a goose. Whether or no this interpretation be correct, it is an interesting contribution to the comparative study of ancient medical lore. Incidentally it may be noted that in his monograph on "Algiers as a Winter Resort," Dr. Alfred S. Gubb, of London, describes the discovery of a new temple and statue of Asklepios during recent excavations at Timgad. The worship of our patron deity was apparently as widely diffused as Greek civilization.

## A NOTABLE MEMORIAL MEETING.

IN the late afternoon of Friday, March 31, a memorial meeting was held under the auspices of the Bowditch Club for Dr. H. P. Bowditch and Dr. W. R. Brinckerhoff in the library of the Physiological Department of the Harvard Medical School. The Bowditch Club, founded some twelve years ago, was named in honor of Dr. Bowditch and has always been composed of younger men interested in the advancement of medicine through research. The club has continued to hold meetings during the intervening years, many of which Dr. Bowditch attended. Dr. Brinckerhoff before leaving Boston to take up his work in Honolulu was an active and always interested attendant at the dinners and meetings of the club. It was, therefore, fitting, that this special meeting should have been held under the auspices of this organization to do honor to two of its most distinguished members. It was also eminently appropriate that the meeting should have been held in a room closely identified with many of Dr. Bowditch's activities. The hour chosen was five o'clock, and as twilight came on toward the close of the exercises it seemed peculiarly to typify the feelings of the distinguished group of men invited by the club who had come to do honor to its two former members.

Dr. E. E. Southard, president of the Bowditch Club, after a few well-chosen introductory remarks, gave an admirable account of Brinckerhoff as a student and later as an investigator and teacher, a task he was peculiarly fitted to undertake since he was both a friend and a classmate of Brinckerhoff. Apart from his generally known traits of character and attainment, Dr. Southard drew attention to other less recog-

nized attributes which lent dignity to a peculiarly upright character. Following Dr. Southard, Dr. Walter B. Cannon, for many years closely associated with Dr. Bowditch both as student and teacher, later succeeding to his professorship, gave an account of Dr. Bowditch's long and productive life devoted very largely to the development of physiological science in its broadest aspects. Here, also, Dr. Cannon spoke from a close personal acquaintance with his former teacher which few others excepting his immediate contemporaries could have had. His remarks were full of feeling and appreciation of the high ideals and distinguished accomplishment which had attended Dr. Bowditch through his long period of activity.

Major Henry L. Higginson spoke informally and feelingly especially of Dr. Bowditch's war record, a period of his life of which he himself was not accustomed to speak except under mild compulsion. Mr. Higginson pointed out that excellent as he was as an officer and leader, his heart was not so much in the affairs of the war as in the prospect of establishing himself as an investigator, to which he proposed to devote his life, an object amply gratified in the succeeding years. It was remarkable, the speaker said, that so young a man — he was then twenty or twenty-one — should have had so clear a conception of his life work and should have been so favored as to have carried out the ideal he then set himself. President Eliot concluded the exercises by a touching personal tribute to Dr. Bowditch, to his character and to his capacity as a teacher and organizer. Coming as this tribute did from a man several years Dr. Bowditch's senior, who had been closely associated with him through many years of service to Harvard University and to the cause of education in general, the remarks made a profound impression upon every one present. President Eliot also spoke of Brinckerhoff, whom he naturally had known less well and in quite a different way. What he said of him did not occupy more than five minutes of time, but in it was compressed a tribute to his service to the community and to his devotion to the cause of productive research and high living which summarized in a way not soon to be forgotten the deep sense of loss which Brinckerhoff's death has occasioned.

The meeting was an impressive occasion from its simplicity, its informality and from the sincerity of the sentiments expressed regarding the double loss which Harvard University and the community at large has sustained.

## MEDICAL NOTES.

Birth of a Nineteenth Child. — It is reported from Chicago that on March 28, Mrs. John Adducci of that city gave birth to her nineteenth child. Mrs. Adducci is thirty-nine years old. Of the 19 children, 16 are living.

Award to Dr. Grenfell. — It is reported from New York that, on March 27, the Council of the Royal Geographical Society of England awarded to Dr. Wilfred T. Grenfell the Murchison bequest for the current year, in recognition of his work as an explorer in Labrador.

Memorial to Dr. Scott. — Report from Philadelphia states that the sum of $10,000 has been contributed by friends of the late Dr. J. Allison Scott, formerly adjunct professor of medicine at the University of Pennsylvania, for the establishment, in his memory, of a fellowship in medical research at that university.

Male and Female Infant Mortality. — A London physician is reported recently to have urged that especial measures be taken in England to check the mortality among male infants, in order to prevent the accumulation of an excess of superfluous women in that country. It is to be feared that this ungallant suggestion would be not only a piece of unjustifiable sex discrimination, but an attempted interference with normal process. As a matter of fact, the excess of females over males in any community is merely a biologic provision for extending natural selection.

Progress of the Plague Epidemics. — Report from Amsterdam states that there has recently been an outbreak of bubonic plague in the southeastern portion of the Dutch colony of Java. It is said that there have been already 350 cases of the disease in the island, with 224 deaths.

Report received at Washington, D. C., from the United States consul at Harbin states that although the epidemic of bubonic plague has abated considerably in that city and at Fuchiatien, China, the disease is still extensively prevalent throughout northern Manchuria. The United States consul at Shuanchengpu is said to estimate that there have been five thousand cases of plague in that city.

Interpretation of Pure Drug Laws. — Before the United States District Court at Boston last week, information was filed by the Assistant United States District Attorney against eight manufacturing firms in Massachusetts for

alleged violation of the pure food and drug laws. Before the same court a demurrer was also filed by another firm against information previously lodged against it. This firm contends that the laws in question have nothing to do with curative properties claimed for medicinal remedies, and cites a decision recently rendered in its favor by the District Court of Eastern Missouri. The demurrer has been taken under advisement and will probably be argued before the United States Supreme Court, whose decision will be important as determining future interpretation of the law with regard to proprietary medicines.

### BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, April 4, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 45, scarlatina 42, typhoid fever 4, measles 169, smallpox 0, tuberculosis 57.

The death-rate of the reported deaths for the week ending April 4, 1911, was 19.15.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, April 1, 1911, was 233, against 290 the corresponding week of last year, showing a decrease of 57 deaths, and making the death-rate for the week, 17.64. Of this number 116 were males and 117 were females; 228 were white and 5 colored; 141 were born in the United States, 90 in foreign countries and 2 unknown; 50 were of American parentage, 156 of foreign parentage and 27 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 46 cases and 4 deaths; scarlatina, 43 cases and 2 deaths; typhoid fever, 7 cases and 1 death; measles, 198 cases and 1 death; tuberculosis, 67 cases and 30 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 32, whooping cough 3, heart disease 24, bronchitis 5. There were 8 deaths from violent causes. The number of children who died under one year was 32; the number under five years, 50. The number of persons who died over sixty years of age was 77. The deaths in public institutions were 94.

Reappointment of School Physicians. — The Boston Board of Health last week recommended the reappointment of the present eighty members of the staff of public school physicians in this city, with an increase of salary to $500 each.

Graduating Exercises of Homœopathic Training School. — The graduating exercises of the Massachusetts Homœpathic Hospital Training School were held last week at the hospital building in Boston. Thirty nurses received diplomas.

Diphtheria in Winthrop. — The epidemic of diphtheria in Winthrop, Mass., to which we referred in last week's issue of the Journal, is still prevalent in that town. On April 1, 4 new cases of the disease were reported, making a total of 22 then known to exist. The Sunday-schools as well as the public day schools have been closed.

Prohibition of Public Drinking-Cups in Rhode Island. — It is reported from Providence, R. I., that on March 28, a bill prohibiting the use of common public drinking cups in that state was unanimously passed by the House of Representatives of the Rhode Island General Assembly. It is said that in Connecticut, also, the legislative abolition of the public drinking cup has been recommended by the State Board of Health.

Work and Needs of the Boston Dispensary. — In a letter on March 27 to the public press, the president of the board of managers of the Boston Dispensary called attention to the new plans and needs of this institution. During the year 1910 about 40,000 patients were treated at the Dispensary, and 20,000 visits made by district physicians. To enable the continuance and extension of this work, there is need of further money subscriptions, for which appeal is now made to the public.

Decline in the Therapeutic Use of Drugs. — It is well known that the use of drugs in all regular hospitals has steadily decreased during the past fifty years. Statistics recently published from the Boston Dispensary show that between 1854 and 1868 the apothecary of that institution filled an average of 2.1 prescriptions for each patient. In 1870, this figure had fallen to 1.32; in 1880, to 1.06; in 1900, to 0.89. In 1910 it was 0.81. During this time there has of course been a great increase in the use of massage, electricity and other mechanical methods of treatment.

Dartmouth Medical School Commencement. — The one hundred and thirteenth commencement of the Dartmouth Medical School was held with appropriate graduating exercises

at Hanover, N. H., on March 28. The degree of M.D. was conferred on eleven candidates. At the dinner subsequently given by the trustees to the graduates, addresses were made by Prof. C. C. Steward on "The Doctor and his Friends"; by Prof. C. E. Bolser on "The Doctor and the Patient"; by Dr. H. N. Kingsford on "The Doctor and his Profession"; and by Prof. E. J. Bartlett on "The Administration of the Hippocratic Oath."

NEW YORK.

A Centenarian. — Edward Van Voast, who came of good old Dutch and Revolutionary stock, died on March 31, at his home in Guilderland, Albany County, N. Y., at the reputed age of one hundred and seven years, having supposedly been born in Glenville, Schenectady County, N. Y., on Jan. 4, 1804. The illness which ended in his death is stated to have been the first of a serious character that he ever experienced. He was able to read without glasses, and used alcohol and tobacco in moderation.

Withdrawal of Russell Sage Institute from City Hospital. — As a result of the differences with Commissioner of Charities Drummond, the directors of the Russell Sage Institute of Pathology have now definitely decided to terminate the existing agreement with the Department of Public Charities and withdraw as pathologists of the City Hospital and City Home (Almshouse) on Blackwell's Island. This decision was reached at a meeting of the directors on March 27, when there were present Dr. D. Bryson Delavan, president of the institute; Drs. Simon Flexner and Theodore Janeway, and Prof. Graham Lusk, of Cornell University. The institute has been carrying on its work in the Strecker Memorial Laboratory at the City Hospital, and in leaving the island will relinquish some six thousand dollars a year which the city contributed toward its cost of maintenance. No announcement as to the field of its activities in the future has as yet been made.

Children's School Farm League. — A meeting in furtherance of the aims of the International Children's School Farm League was held at the Colony Club on March 29, when letters were read from Hon. Joseph H. Choate and from ex-President Roosevelt. The latter wrote that he hoped the day would come when there would be a school farm attached to every school and hospital in the city. Mrs. Henry Parsons, the founder and president of the league, who started the first school farm in New York, presided. Addresses were made by her son, Henry Griscom Parsons, secretary of the league and director of the department of school gardens for the training of teachers in New York University, and by Dr. John Winters Brannan, president of the board of trustees of Bellevue and Allied Hospitals, who, in commending the purposes of the league, said he could testify that the children's condition had materially improved from the work, while the teachers now had no discipline which was more heartily dreaded than the withholding of permission to go to the gardens.

Instruction in Practical Hygiene. — A comprehensive plan for the instruction in practical hygiene of teachers, as well as of the children in and out of school, elaborated by Dr. C. Ward Crampton, director of physical training of the Board of Education, has been put into effect in the public schools of New York. It is unnecessary to go into the various details of this, but the general idea is that the principles of hygiene should be inculcated throughout the pupil's entire course of study. In the beginning, Dr. Crampton states, the instruction should be by means of stories and illustrations from daily life. For the first three years it is needless to give reasons for the rules, but as the child progresses he will want to know why, and then may be told. The early lessons should inculcate habits of cleanliness of mind as well as body, attention particularly being given to the care of the teeth and to proper methods of study, play and rest, rather than to theoretical instruction in anatomy and physiology, which would be beyond the child's comprehension. After the third year textbooks should be used, but still the necessity of practicing the principles of hygiene, as outlined in the lessons, should be emphasized, and the tendency to try to cover too much ground in the class restrained. Only one or two points should be taken up at a time, and the pupil should be thoroughly grounded in these before passing on further. One of the principal needs is that the instruction should be continuous throughout the school, without breaks between classes, repetition or inconsistency of methods. The idea is to lead the pupil to adopt the principles of hygiene into his daily life, and this can be accomplished only by persistent effort. To assist in the carrying of the instruction received into practice, it is recommended that the larger pupils be provided with sets of rules to keep at home for constant reference.

# Current Literature.

## Medical Record.

March 25, 1911.

1. *Meltzer, S. J. *On the Injection of Drugs, Especially of Salvarsan (Ehrlich), into the Lumbar Muscles.*
2. North, C. E. *An Investigation of Recent Outbreaks of Typhoid Fever in an Adirondack Camp, and the Discovery of a Typhoid Carrier.*
3. Fowler, R. S. *Principles Underlying the Surgery of the Spinal Cord and Nerve Roots. Indications for Operative Interference in Injuries of the Spinal Cord; Surgery of the Spinal Nerve Roots.*
4. Pfahler, G. E. *The Röntgen Rays as a Means of Diagnosis of Carcinoma of the Stomach and Bowel.*
5. Bishop, L. F. *The Nauheim Methods in the Management of Cardiac Diseases.*
6. Eising, E. H. *Bilateral Fibromyoma of the Broad Ligament.*
7. Mills, G. W. T. *Diagnostic Value of Tuberculin as Shown by Nineteen Autopsies.*
8. Arnold, W. F. *Prophylaxis against Hookworm Infection by Means of Efficient Shoes.*

1. Meltzer studied the effect of intramuscular injection of drugs in rabbits. He concludes that injection into the lumbar muscles is practically as effective as intravenous injection. The effect of injection into the gluteal muscles is inconstant and insignificant. The sacrospinal muscle is especially suitable; the absorption from this muscle is superior to that from the gluteal muscles and vastly superior to that from the subcutaneous tissue. In a limited number of cases of syphilis, salvarsan injected into this muscle has exerted a beneficial influence upon secondary and tertiary manifestations and upon the Wassermann reaction without causing pain or other serious ill effects. [L. D. C.]

## New York Medical Journal.

March 25, 1911.

1. Bierhoff, F. *The Problem of Prostitution and Venereal Diseases in New York City.*
2. Gant, S. G. *The Simplified Treatment of Anorectal Diseases.*
3. Rosenberger, R. C. *The Presence of Intestinal Parasites in Inmates of the Philadelphia General Hospital.*
4. Cohen, S. S. *Zinc Oxide in Face Powder.*
5. Amberg, E. *Some Hints for Mastoid Dressings.*
6. Stewart, J. C. *Non-Suppurative Osteomyelitis.*
7. Goldman, A. *Bismuth in Gastric Therapy.*
8. Ehrenfried, A. *Picric Acid, a Retrospect.*
9. Russell, C. T., Jr. *Vaccine Therapy.*

## The Journal of the American Medical Association.

March 25, 1911.

1. Reed, C. A. L. *Autonomic Manifestation and Peripheral Control of Pain Originating in the Uterus and Adnexa.*
2. Van Meter, S. D. *The Open Treatment of Fractures.*
3. Sluder, G. *A Method of Tonsillectomy by Means of a Guillotine and the Alveolar Eminence of the Mandible.*
4. MacAusland, W. R., and Wood, B. E. *Lipomatosis of the Lower Extremities, with Report of a Case.*
5. Bondy, J. *Angiosarcoma of the Liver in an Infant.*
6. Nicholson, P. *A Simple Apparatus for Proctoclysis.*
7. Roberts, P. W. *A New Method for Applying Plastic Jackets in Hyperextension.*
8. *Connell, F. G. *Primary Suture of Subparietal Rupture of Kidney, with Report of Case.*
9. Rhodes, J. E. *Adenoid and Tonsil Operation.*
10. Souchon, E. *The Preservation of Anatomic Dissections with Permanent Color of Muscles, Vessels and Organs.*
11. *David, V. C. *Typhoid Meningitis.*
12. Massey, G. B. *A Case of Epithelioma of the Vulva and a Case of Recurrent Growth of the Meatus Urinarius, Treated by Ionic Surgery and Plastic Operation.*
13. Kitasato, S. *Vaccination and Smallpox in Japan.*
14. Vincent, G. E. *Standards and Authority.*
15. Nice, C. N., McLester, J. S., and Torrance, G. *Pellagra Treated with Salvarsan.*
16. Crigler, L. W. *Sodium Cacodylate in Tertiary Syphilis. Report of a Case.*

8. Connell, in his review of the subject of subparietal rupture of the kidney, brings out the following essential points. The theory as to the cause that may explain a majority of the cases is that of Küster, in which the rupture is supposed to be due to hydraulic pressure acting through the full vessels and the pelvis and causing the organ to burst along lines radiating from the hilum towards the point of maximum impact against the lower rib. As regards symptoms, shock and collapse are often absent or but transitory and the lack of recognition of this fact has been the cause of mistaken diagnoses and delay in operative treatment in many cases. Pain is usually severe at the time of the injury. Its duration varies, but it is usually present and is followed by tenderness and a dull ache in the region of the ruptured organ. Rigidity of the muscles over the affected kidney is of great importance. Hematuria following trauma in the region of the kidney is not pathognomonic of injury to that organ, as the bleeding may originate in the bladder or urethra. There may be no differential sign or symptom between slight injury and complete rupture; therefore, it would seem advisable to expose the kidney and determine the extent of the injury in every case in which we can arrive at a probable diagnosis of injury to the kidney. This is probably the wisest cause. As it is impossible to separate the slight from the extensive injury, it is preferable to treat all cases as serious until they can be proved otherwise. Packing and draining or suture is a safer procedure than nephrectomy.

11. David states that typhoid bacilli are not found in the cerebrospinal fluid in uncomplicated cases of typhoid fever. Typhoid patients suffering the ordinary nervous manifestations, such as delirium, involuntary discharges and severe headaches, are not benefited by withdrawal of cerebrospinal fluid, although the fluid may be under increased pressure. In patients showing symptoms of meningitis, the spinal fluid may be sterile, but lumbar puncture and withdrawal of fluid has improved the clinical condition in a striking way in some cases. When typhoid fever patients show meningeal symptoms, such as rigidity of the neck, Kernig's sign, convulsions, strabismus or irregularity of the pupils, lumbar puncture should always be done and the fluid examined bacteriologically. [E. H. R.]

## The Lancet.

March 4, 1911.

1. *Kidd, P. *An Address on Some Mediastinal Affections.*
2. Emery, W. d'E. *Hunterian Lecture on the Immunity Reaction in Diagnosis, especially of Tuberculosis and Syphilis. Lecture II.*
3. Gauvain, H. J. *The Mechanical Treatment of Spinal Caries.*
4. Yearsley, M. *The Education of the Deaf: its Present State in England, with Suggestions as to its Future Modification and Development. Lecture II.*
5. *Waterhouse, R. *A Case of Suprarenal Apoplexy.*
6. Armstrong, H. *Cranial Asymmetry Due to Postural Causes.*
7. Friend, H. E., and English, T. C. *A Case of Rodent Ulcer of the Thigh.*
8. Bury, G. W. *Notes on a Case of Retention of Urine.*
9. Tibbles, W. *Infantile Diarrhœa.*
10. Romer, F. *Bone Setting and Its General Principles.*

1. Kidd contributes an interesting article on some mediastinal affections. After first considering some of the rarer causes of mediastinal disease, he takes up the question of tuberculous mediastinal glands. He calls attention to the statement of d'Espine, of Geneva, that the presence of enlarged bronchial glands could be determined by auscultation over the spinous processes of the seventh cervical

and upper two or three dorsal vertebræ. Pectoriloquy or a bronchial quality of respiration in this situation he considers to be a certain sign of enlarged subtracheal glands. Kidd quotes Laennec and Gee that pectoriloquy or bronchial breathing is normally heard over this area, and his own investigations confirm this. Therefore he thinks that the views of d'Espine should be taken with considerable caution on this point.

5. Waterhouse presents the details of a case of sudden death in a child of eight months. Autopsy showed extensive hemorrhage into the suprarenal capsules as the evident cause of death. This he calls "suprarenal apoplexy." He briefly reviews the few previously reported cases of this condition. [J. B. H.]

### British Medical Journal.

#### March 4, 1911.

1. *Hertz, A. F. *An Address on Dilated Stomach.*
2. Gordon, W. *Prevalent Rain-Bearing Winds and the Milk Supply of Manchester during the Years 1896–1909.*
3. *Cammidge, P. J. *The Diagnosis of the Commoner Causes of Chronic Jaundice.*
4. *Chambers, G. *Observations on the Urines of Marathon Runners.*
5. Thompson, J. W. *Intussusception of the Appendix.*
6. Cheatle, G. L. *A Clinical Lecture on Chronic Traumatic Mastitis.*
7. Atkinson, A. G. *An Unusual Form of Perineal Hernia.*

1. Hertz gives a careful and systematic paper on dilated stomach; as to causes, he considers atony and pyloric obstruction. He briefly considers the symptoms, but goes into details of the various methods of investigation of the motor functions of the stomach, including percussion, inflation with gas, bismuth and the x-ray. In treatment for the atonic stomach he discusses the question of diet, drugs, massage and electricity. Gastro-enterostomy is strongly contra-indicated. The treatment of pyloric obstruction is gastro-enterostomy.

3. Cammidge, in a general article, discusses the cause and significance of chronic jaundice and goes over the symptoms and signs associated with this condition.

4. Chambers examined the urines of eight Marathon runners before and after the race. He comments on the the results found, which are in accord with other investigations along this line. [J. B. H.]

#### March 11, 1911.

1. Lane, W. A. *A Clinical Lecture on Some of the Common Injuries of the Knee-Joint and their Consequences.*
2. Fagge, C. H. *A Lecture on Injuries of the Lower End of the Humerus.*
3. Briscoe, J. C. *Rheumatoid Arthritis.*
4. Bramwell, B. *Note on Two Cases of Pernicious Anemia Treated by Salvarsan.*
5. Haslam, W. F. *The Lettsomian Lectures on a Review of the Operations for Stone in the Male Bladder.*

### Edinburgh Medical Journal.

#### March, 1911.

1. *Gibson, G. A. *Arterial Pressure.*
2. *Matthews, E. *Iodides in High Blood-Pressure and Arteriosclerosis.*
3. *Greig, D. M. *On Congenital High Scapula.*

1. Gibson, in a general article on arterial pressure, after first clearly defining the terms he is to use, discusses the influences at work which maintain this pressure. Among these he mentions the cardiac energy, condition of the arterial walls, resistance in the arterioles, and the character of the blood. He reviews the various methods and apparatuses in use to investigate and estimate the pressure and the possible fallacies in their use. He then considers arterial pressure in health and its variations according to circumstances and conditions, and last, in detail, arterial pressure in disease. He briefly considers arterial pressure in prognosis and the treatment of changes in pressure.

2. Matthews, discussing the mode of action of iodides in high blood-pressure, the application of iodides in high pressure, and arteriosclerosis, in so-called idiopathic high blood-pressure and in other conditions, comes to the following conclusions: (1) Iodides have a marked hypotensive action in high blood-pressure without arteriosclerosis; in advanced arteriosclerosis with high pressure, iodides have no hypotensive action. (2) Iodides act as vasodilators. (3) To produce a beneficial effect in hypertension, 10 gr. of potassium iodide should be the initial dose, and this should be rapidly increased if necessary. (4) Organic iodides contain too little iodine to be efficient.

3. Greig presents a paper, interesting chiefly on account of the rarity of the condition he describes, on congenital high scapula. There are numerous excellent illustrations and a full bibliography. [J. B. H.]

### Deutsche Medizinische Wochenschrift. No. 9.

#### March 2, 1911.

1. Schultze, E. *Diagnosis and Treatment of Multiple Sclerosis in its Early Stages.* (Clinical lecture. Continuation.)
2. Kraus, R., Lowenstein, E., and Volk, R. *The Mechanism of the Tuberculin Reaction.*
3. *Axenfeld, T., and Stock, W. *Importance of Tuberculosis in the Etiology of Intra-ocular Hemorrhages and of Proliferative Changes in the Retina, especially Periphlebitis Retinalis, in Tuberculous Patients.*
4. Jonnesco, T. *General Spinal Anesthesia.*
5. Bruns, H. *Ankylostomiasis.*
6. Bach, H. *The Effect of Ultra-Violet Quartz Lamp Light on the Blood-Pressure, with Remarks on its Therapeutic Use in General Diseases.*
7. Cohn, F. *Poisoning with Potassium Permanganate.*
8. Zabludowski, A. *Further Experiences with Disinfection of the Hands and Field of Operation by Means of Alcohol Tannin.*
9. McDonald, E. *An Improved Method of Sterilizing and Preserving Catgut.*
10. Boas, J. *Remarks on the Article in No. 6 of this Journal by Dr. Schlesinger Concerning a Pneumo-Pessary for Hemorrhoids and Anal Prolapse.*
11. Rosenberg, A. *Zykloform, An Analgesic for Laryngological Practice.*
12. Killian, G. *Test for Sensitiveness of the Nasal Mucous Membrane.*
13. Zernick. *New Preparations.*

3. Azenfeld and Stock consider that there is an intimate relation between tuberculosis and certain eye diseases in young people. The relation is especially striking in dark ultra-ocular hemorrhages and the so-called retinitis proliferans. Also in tuberculous individuals there are frequently encountered perivascular changes in the retina, constituting a kind of periphlebitis. The point which seems uncertain is whether these areas are due to actual presence of the tubercle bacilli or are the result of toxins.

[C. F., Jr.]

### Münchener Medizinische Wochenschrift. No. 10.

#### March 7, 1911.

1. Hirschel, G. *The Employment of Local Anesthesia in Major Operations on Breast and Thorax.*
2. Moro, E. *The Classification of Erythrodermia Desquamativa.*
3. Trumpp, J. *Influenza?*
4. Higier, H. *Psychic Abnormalities in Chronic Cocainism.*
5. Werther. *Nerve Recurrences, Abortive Cases and Further Experiences after Salvarsan.*
6. Schanz, F. *Salvarsan Treatment and Optic Neuritis.*
7. Hausmann. *A Case of Gumma of the Stomach, cured by Salvarsan Treatment.*
8. Montesanto, D. E. *The Effect of Salvarsan on the Bacilli of Leprosy.*
9. Knauer, G. *A Simple Substitute for Carbonic Acid Snow in the Treatment of Skin Diseases.*
10. Kuenitsky, M. *A Tube for Treatment with Carbonic Acid Snow.*
11. Hasselmann. *A Cutter for Plaster Casts.*
12. Strube, C. *A Contribution to the Simplification of Gastric Lavage.*
13. Koehler, M. *Some Practical Points for the Treatment of Peritoneal Ileus.*
14. Schneller. *Gastric Fever.*

15. Mayer, H. *Skin Hemorrhages on the Congested Arm.*
16. Füllenborn. *Remarks on Dr. Reichmann's Work: "An Unusual Filarial Disease."*
17. Heilbromer, K. *The Forensic Diagnosis of Epilepsy.* (Conclusion.)
18. Pfaundler. *Theodor Escherich.*

Deutsche Zeitschrift für Chirugie. Bd. 108. Hefft. 5–6. February, 1911.

1. *Fronune, A. *Contribution to the Appendicitis Question, Based on Experiences of Fourteen Years in the Göttingen Clinic.*
2. *Jerenitsch, A. P. *Anesthesia by the Intravenous Use of Hedonal.*
3. Flinzer, E. R. *Proteus Vulgaris. The Cause of a Subperichondral Rib Abscess.*
4. Hirohowa, W. *A Case of Prolapse of the Bladder in Pertussis.*
5. Fabrikant, M. B. *Double Empyema.*

1. The cases of appendicitis at the Göttingen Clinic occurring in the last fourteen years have been grouped and studied under the following headings.

(1) Early operation. (2) Intermediate stages, sick from three to five days. (3) Late stages, sick five days or more. Abscess formation. (4) Diffuse peritonitis. (5) Interval operation. (6) Fistula formation following appendicitis. (7) Unoperated cases. Many cases are reported under each heading. The conclusions arrived at do not differ in any way from the views which are generally held throughout this region.

2. The author reports 65 cases operated on under hedonal anesthesia, the drug being given intravenously. A .075% solution of hedonal in physiological saline is injected into a vein as is necessary through the operation to keep the patient unconscious. The operations performed were varied and included work on the head, chest, peritoneal cavity, perineum and extremities. The technic and apparatus are thoroughly described. There were two failures due to poor venous connections. There were no untoward results reported.

Their conclusions were as follows.

(1) Theoretically intravenous anesthesia is as safe as rectal or inhalation anesthesia.

(2) The injection of a .075% solution of hedonal in physiological saline intravenously will induce general anesthesia.

(3) The anesthesia can be continued over a longer period of time by the periodic injection of decreasing amounts of the solution.

(4) The dose necessary for anesthesia is much smaller than a toxic dose.

(5) The anesthesia is accompanied by good heart action and quiet rhythmic breathing.

(6) The introduction of the fluid does not markedly affect the blood pressure.

(7) By the intravenous injection of hedonal, the primary period of excitement is done away with.

(8) Too slow injection delays the appearance of anesthesia.

(9) In several cases, before complete anesthesia was produced, cessation of breathing took place due to too rapid injection of the fluid.

(10) Deep sleep is certain.

(11) During the post-operative period, headaches and vomiting are absolutely lacking.

(12) The kidneys are not affected.

(13) This method is indicated especially in operations on the head and neck and also on patients suffering from diseases of the kidneys, lungs and heart.

(14) In very strong individuals, and in cases where a deep sleep is desired, a previous injection of 3% hedonal by rectum is necessary. [J. B. S., Jr.]

Archiv für Klinische Chirurgie. Bd. 94. Hefft. 2–3. January — February, 1911.

10. Hildebrand, O. *Contribution to the Surgery of the Spinal Cord.*
11. *Axhausen, G. *Studies in the Field of Bone Pathology and Bone Surgery.*
12. Pochhammer, C. *The Origin of Parosteal Callus Formations and the Artificial Production of Callus in Animals and in Man.*
13. Rosenbach, F. *Experimental Studies on Tryptic Digestion.*
14. *Grune. *A Contribution of the Casuistics of Post-Traumatic Ossification of the Trapezoid and Conoid Ligament.*
15. Rosenbach, F., and Escherr. *Experimental Contribution to the Pathogenesis of Round Ulcer.*
16. Gulekke. *Experimental Investigations on Tetany.*
17. *Cahn, A. *Benign Epithelial Heterotopia as Cause of a Rectal Tumor.*
18. Schoemaker, J. *The Technic of Extensive Resection of the Stomach.*
19. Sasse, F. *The Treatment of Acute Suppurative Appendicitis, with Circumscribed or Diffuse Peritonitis.*
20. Zuppinger, H. *Contribution to the Mechanics of Dislocation of Single-Axis Joints.*
21. Brüning, F. *Comparative Experiments in Disinfection with Tincture of Iodine and Alcohol.*
22. *v. Haberer, H. *Pedunculated Adrenal Transplantation and its End Results.*
23. *Poulsen, K. *Trigger Finger.*
24. Duncker. *Prolapse of the Fatty Capsule of the Kidney Simulating a Lumbar Hernia.*
25. *Minor Communications:*
    *a.* Deutsch, A. *Wound Treatment with Novo-Iodine.*
    *b.* Bolognesi, J. *The Spontaneous Recurrence of Cutaneous Epithelioma.*

11. Axhausen presents a series of interesting and valuable researches in problems associated with the surgery of bone injuries and diseases. He makes, first, some critical observations and new contributions on free bone transplantation. Next he considers the pathologic concept of halisteresis and bone dystrophy, concluding that pathologic changes of the internal secretions are ultimately responsible for disturbances of the quantitative and qualitative regulation of the bony structure, for the osteodystrophic processes. Third, he presents histologic and physiologic studies of the penetrating vascular canals of bone tissue, the so-called Volkmann's canals. Finally, he produces critical and experimental material on the genesis of arthritis deformans, especially on the significance of aseptic bone and cartilage necrosis. His work is admirably illustrated by microscopic and x-ray plates, and contains ample bibliographies.

14. Grune reports, with x-rays, a rare case of ossification of the coraco-clavicular ligaments, following a fall on the left shoulder.

17. Cahn reports a benign tumor of the rectum which he describes histologically as an epithelial heterotopia and discriminates from carcinoma in that the latter has a destructive active growth of modified epithelial cells and is principally cellular in composition, whereas the former is a passive inclusion of unmodified epithelial cells and consists chiefly of hyperplastic gland tissue and stroma. [This distinction seems at best academic. R. M. G.]

22. From an extensive series of animal experiments, the author concludes:

(*a*) That transplantation of the adrenal with a pedicle is followed by normal functional results of indefinite duration.

(*b*) That the transplanted adrenal fragment develops an entirely new and complete structure of cortex, medulla and capsule.

(*c*) That there is no tendency of the transplanted adrenal to malignant degeneration.

(*d*) That the medulla is to be regarded as a vital functional constituent of the organ.

(*e*) That such transplantation in man might become useful in the surgical treatment of Addison's disease.

23. Poulsen reports 19 cases of trigger finger and collects from the literature 64 others. From a study of these he concludes that the condition most frequently proceeds from tumors on the tendon or from narrowing of the tendon sheath, less often from articular or periarticular lesions. The origin of the tumor may be from direct trauma, from pressure or from congenital constriction of the sheath. [R. M. G.]

ANNALES DE L'INSTITUT PASTEUR.

JAN. 25, 1911.

1. *NICOLLE, C., AND CONSEIL, E. *Experimental Researches on Exanthematic Typhus Undertaken at the Pasteur Institute of Tunis during the Year 1910.* II. (To be continued.)
2. AYNAUD, M. *The Globulin of Man.*
3. WOLLMAN, E. *The Production and Development of Sterile Flies. A Contribution to the Knowledge of the Rôle of Bacteria in the Digestive Tract.*
4. MARGOULIES, M. *Action of Intra-Pleural Injections of Mellin's Food on the Progress of Certain Infections (Chicken Cholera in the Rabbit).*

1. In a long and complete article Nicolle and Conseil record the results of their experimentations on typhus fever during the past year. Their work is not finished in this number of the journal. They conclude that in the blood serum of convalescents and of animals cured of this disease there are bodies which can be used as a preventive against this disease. This can be used in epidemics and by people handling cases. These properties only exist in the serum for a short time after disappearance of the rash. [C. F., JR.]

BULLETTINO DELLE SCIENZE MEDICHE.

JANUARY, 1911.

1. *TASSINARI, S., AND MUGGIA, A. *The Prophylaxis of Eclampsia.*
2. *CAO, G. *The Opsonic Index in the Infections by Blastomycetes.*
3. *CAO, G. *A Pathogenic Sarcina.*
4. GUERRIERI, R. *The Mental State of a Woman Affected by a Tumor of the Right Orbital Cavity Compressing the Frontal Lobes of the Brain.*
5. *BELLEI, G. *Contribution to the Study of the Alimentary Intoxications Caused by the Proteus Vulgaris.*

1. Summarizing the records of the Bologna Maternity Asylum for the past fourteen years, the authors find that of 1,838 patients delivered during that time, 66 had albuminuria at some time during pregnancy or puerperium. Of these, only 3 had convulsions and only one died. These excellent results they attribute to careful clinical observation and prophylactic treatment of patients in pregnancy.

2. From a series of animal experiments, Cao reaches the following conclusions:

(*a*) That the serum of normal dogs, rabbits and guinea pigs has a natural opsonic power approximately equal towards pathogenic and towards non-pathogenic blastomycetes.

(*b*) That the same animals, after being vaccinated with cultures of pathogenic blastomycetes, killed by heat, yield a serum endowed with an opsonic power equal to that of normal animals towards non-pathogenic blastomycetes, but considerably exalted towards the pathogenic blastomycetes with which they were vaccinated.

(*c*) In vaccinated animals, the opsonic index is considerably higher towards the pathogenic blastomycetes which have served as antigen than towards non-pathogenic blastomycetes.

(*d*) Animals attacked by an experimental blastomycetic infection behave like the vaccinated animals, and the opsonic index of their serum is considerably higher towards the blastomycetic agents of the infection than towards non-pathogenic blastomycetes.

These results indicate that the opsonic properties of the blood react towards the blastomycetes as towards other infecting organisms.

3. Cao describes a new pathogenic sarcina, closely resembling S. *lutea*, which he isolated from the infected udder of a milch cow. He gives its cultural characteristics and reports a series of inoculation experiments which he performed with it upon guinea pigs, rabbits, rats, mice, dogs and fowls. He believes it probably a variety of the aerial S. *lutea*, which acquired virulence from sojourn in manure, or by passage through the intestine of cockroaches, of dung-eating beetles or of other insects, or by sojourn in putrefying organic substances.

5. By bacteriologic examination of some sausages, supposed to have caused an epidemic of ptomaine poisoning, Bellei found the following organisms: bacillus mesentericus vulgatus, bacterium coli, proteus vulgaris. Animals inoculated with pieces of meat taken from these sausages died of lesions caused exclusively by the proteus vulgaris. The author, therefore, believes this organism to have been the causative agent of the epidemic in question. [R. M. G.]

FEBRUARY, 1911.

1. *GHILLINI, C. *Operations Performed in the United States. Surgery and Orthopedics in America.*
2. ZAMBONI, G. *Typhoid Fever in Bologna and in the Pediatric Clinic in the Decennium, 1900–1909.*

1. Ghillini reports 2 cases on which he operated at the time of his visit to the United States in the spring of 1908, and speaks most enthusiastically and interestingly of his experiences and impressions of orthopedics and surgery in this country. He considers the technic of American surgeons excellent, but says that "their great operative ability is accompanied by a scientific deficiency, which depends on the brevity of their studies." He describes at some length the Mount Sinai Hospital, several orthopedic institutions, and the New York Post-Graduate Medical School and Hospital. The points which especially excited his admiration were:

(*a*) The provisional medical license to strangers, in Colorado, for the exercise of their profession.

(*b*) The opportunity for all reputable surgeons to treat their patients at the hospital in Denver.

(*c*) The combination of medical school and hospital. [R. M. G.]

## Miscellany.

### THE CHOLERA EPIDEMIC AT MADEIRA.

IN several issues of the JOURNAL during the past winter we described the progress of the epidemic of Asiatic cholera in Madeira. No new cases of the disease have been reported in the island since the first of March, and the epidemic is, therefore, now officially declared at an end. *The Lancet* for March 18 contains completed statistics of the outbreak. The first cases are believed to have occurred about the middle of October; and in the four and one-half months during which the epidemic prevailed, there were reported 1,769 cases with 556 deaths. In 75% of the cases the onset was acute; in 25% it was gradual. Ten per cent of those attacked were known to be habitual alcoholics, though it does not appear that alcoholism is more a predisposing factor in this infection than in any other. The duration of the disease was from three to ten days. In a few cases the acute attack was succeeded by a chronic typhoidal condition. Numerous healthy cholera carriers were observed. With proper sanitation and quarantine, however, it would seem that the disease should be as controllable and preventable as typhoid fever.

### DISTRIBUTION OF IRISH-BORN POPULATION.

THE population of Ireland has been steadily decreasing for the past fifty years at an average rate of about 7.4% in each decade. This decrease has been largely by emigration to the United States, since the birth-rate in the island has remained relatively high and continues to exceed the death-rate. In 1900 there were in the United States 1,619,449 persons born in Ireland, of whom 425,553 were in New York state and 249,916 in Massachusetts. The ex-

act figures of our 1910 census are not yet available on this point, but it is estimated that at present there are in this country approximately 2,000,000 persons born in Ireland. This estimate, of course, does not include persons born here of Irish parentage. Were these added, there would probably be more persons of Irish extraction in the United States than in Ireland. Boston today has a larger Irish population than any other city in the world except Dublin. These figures afford an interesting modern instance of race migration.

## WORK OF THE ROCKEFELLER HOOKWORM COMMISSION.

A REPORT by the Rockefeller Hookworm Commission states that the existence of uncinariasis has now been demonstrated in Alabama, Arkansas, California, Florida, Georgia, Kentucky, Louisiana, Mississippi, Nevada, North Carolina, Oklahoma, South Carolina, Tennessee, Texas and Virginia. The disease is said to be most extensive in the Carolinas and in Georgia. In 39 counties of the latter state from 40 to 80% of the school-children are estimated to be infected. In Georgia 17,775 children have been examined and 6,000 treated for hookworm. The commission has also begun to distribute through the southern states literature explaining to the people the nature of uncinariasis and the means of its prevention and cure.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MARCH 18, 1911.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | 1,534 | 508 | Waltham | 12 | 0 |
| Chicago | 686 | 180 | Brookline | 9 | 1 |
| Philadelphia | — | — | Chicopee | 7 | 2 |
| St. Louis | — | — | Gloucester | 10 | 2 |
| Baltimore | — | — | Medford | 8 | 1 |
| Cleveland | — | — | North Adams | 6 | 4 |
| Buffalo | — | — | Northampton | 13 | 1 |
| Pittsburg | — | — | Beverly | 6 | 1 |
| Cincinnati | — | — | Revere | 2 | — |
| Milwaukee | — | — | Leominster | 2 | — |
| Washington | — | — | Attleboro | 3 | 1 |
| Providence | — | — | Westfield | 8 | 3 |
| Boston | 275 | 70 | Peabody | — | — |
| Worcester | 59 | 16 | Melrose | — | — |
| Fall River | 57 | 20 | Hyde Park | 4 | 1 |
| Lowell | 31 | 12 | Woburn | 5 | 1 |
| Cambridge | 32 | 4 | Newburyport | 4 | — |
| New Bedford | 42 | 15 | Gardner | 5 | 1 |
| Lynn | 25 | 4 | Marlboro | 5 | 2 |
| Springfield | 29 | 8 | Clinton | 2 | 1 |
| Lawrence | 23 | 8 | Milford | — | — |
| Somerville | 26 | 11 | Adams | 0 | — |
| Holyoke | 17 | 4 | Framingham | 4 | 1 |
| Brockton | 15 | 6 | Weymouth | 5 | — |
| Malden | 16 | 4 | Watertown | 3 | 0 |
| Haverhill | 16 | 2 | Southbridge | 4 | 0 |
| Salem | 16 | 5 | Plymouth | — | — |
| Newton | 11 | 1 | Webster | 2 | 2 |
| Fitchburg | — | — | Methuen | — | — |
| Taunton | 12 | 2 | Wakefield | 1 | — |
| Everett | 5 | 1 | Arlington | 2 | — |
| Quincy | — | — | Greenfield | 6 | — |
| Chelsea | 13 | 2 | Winthrop | 0 | — |
| Pittsfield | 8 | 1 | | | |

## SOCIETY NOTICE.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION. — The annual meeting of the American Medico-Psychological Association will be held June 19, 20, 21 and 22, 1911, at the Brown Palace Hotel, Denver, Colo.

## RECENT DEATHS.

DR. JOHN W. VAN DRUSEN, of Brooklyn, N. Y., died on March 28. He was forty-nine years of age, and a native of Jersey City, N. J. He was graduated from the medical department of New York University in 1884, and at the time of his death was attending physician to the Kingston Avenue Hospital.

DR. ISAAC S. CHAMER, of Flemington, N. J., died on March 25, at the age of seventy-eight years. He was born at Changewater, and was graduated from the College of Physicians and Surgeons, New York, in 1854. In 1889 he was surrogate of Hunterdon County.

DR. CHARLES HENRY LEWIS, a prominent practitioner of New York, died suddenly from cerebral apoplexy on March 31, in the fifty-third year of his age. He was born at Naugatuck, Conn., and was graduated from Yale University in 1882 and from Bellevue Hospital Medical College in 1884. He then served as interne at St. Vincent's Hospital, New York. Dr. Lewis was one of the charter members of the Medical Association of the Greater City of New York, and at the time of his death was visiting physician to St. Vincent's Hospital and president of its medical board. He was also visiting physician to the Columbus Hospital.

DR. SIMON M. BRAININ, of New York, died on March 31. He was a graduate of the University of Dorpat in the year 1881.

REYNOLD JAMES MCCORMACK, M.D., M.M.S.S., died at Roxbury, Mass., on March 29, aged forty-eight years. He was born in Prince Edward Island, Canada. After graduating from St. Dunstan's College, he studied medicine at the University of New York, from which he received the degree of M.D. in 1886. He first settled in Salem, Mass., but in 1893 removed thence to Roxbury, where he continued to practice until his death. For many years he was attending physician to the Boston Nursery and Hospital for Blind Babies. He was a Fellow of The Massachusetts Medical Society, a member of the Norfolk District Medical Society and of the New England Alumni Association of New York Medical Colleges. He is survived by his widow.

DR. WILLIAM PARK, who died last week at Fredonia, N. Y., was born in Boston in 1839. He had practiced dentistry for fifteen years in New York City and for thirty-five years at Fredonia.

HENRY LYMAN SHAW, M.D., M.M.S.S., died in Boston, April 2, 1911, aged seventy-three years.

FOSTER, JAMES MILTON, M.D., M.M.S.S., died in Wilbraham, March 17, 1911, aged eighty-two years.

## BOOKS AND PAMPHLETS RECEIVED.

State Board Questions and Answers. By R. Max Goepp, M.D. Second edition. W. B. Saunders Co.

Diseases of the Nose, Throat and Ear. By William Lincoln Ballenger, M.D. Lea & Febiger.

Encyclopédie Médicale. Redaction et Administration. Paris.

On Percussion and on Percussion of the Kidneys. By Otto Larch, A.M., M.D. Reprint.

La Prostatectomie Transvésicale. Paris. Reprint.

The Making of a Surgeon. By George W. Guthrie, M.D. Wilkesbarre, Pa. Reprint.

Diuretin Knoll. Knoll & Co.

Report of the Commission on the Increase of Criminals, Mental Defectives, Epileptics and Degenerates. January, 1911.

National Association for the Study and Prevention of Tuberculosis. Sixth Annual Meeting, Washington, D. C.

City of Boston, Statistics Department. Special Publications No. 17. Receipts and Expenditures of Ordinary Revenue. 1905-6.

City of Boston, Statistics Department. Referenda in Massachusetts and Boston. By Dr. Edward M. Hartwell.

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## Original Articles.

# AN ANALYSIS OF FORTY-SIX CASES OF PROSTATECTOMY.

BY LINCOLN DAVIS, M.D., BOSTON.

THE brilliant work of the modern pioneers in the field of prostatic surgery has tended to standardize certain definite operative measures, each of which in the hands of its exponents has yielded remarkably successful results. The successes of the leaders in this line of work are both an incentive and a deterrent to newcomers in the field; the high standard established is at the same time alluring and discouraging; yet if the basic operative principles are sound, and are intelligently applied, they should yield, even in the hands of the less experienced and expert, at least reasonably good results.

This report is offered with the object of laying bare the experiences and results in a relatively small number of cases unselected by the operator in a general hospital service. The series of 46 cases represents the entire experience of the writer at the Massachusetts General Hospital; the cases were turned over to him through the courtesy of the members of the visiting staff, to whom grateful acknowledgment is hereby made. The cases reported do not by any means represent the total number of such operations performed at the hospital during this period, but represent from approximately one third to one half of the total cases. There was no selection of cases as to whether favorable or unfavorable; they were taken as they came. Only one case of benign prostatic enlargement was refused operation, and in this case death resulted from uremia within a week of entrance. Two or three cases of hopeless malignant disease of the prostate were not operated upon, in none of which was there complete obstruction.

Of the 46 cases, 36 were of benign hypertrophy, 9 cancer, and 1 tuberculosis. The proportion of the malignant cases seems very high, slightly exceeding the ratio found by Young in his large series of cases.

### CASES OF SIMPLE HYPERTROPHY.

There were 36 of these. The ages of the patients varied from forty-seven to eighty-eight. There were 3 cases under fifty, 4 between fifty and sixty, 16 between sixty and seventy, 10 between seventy and eighty, 3 above eighty. Thirty-four patients were, or had been, married; 2 were single. Only 7 admitted having had gonorrhea.

### GENERAL CONDITION BEFORE OPERATION.

This varied greatly; some were strong and vigorous without other signs of disease, others showed varying degrees of senility or decrepitude, such as arteriosclerosis, irregularity and feebleness of heart action, edema of feet, râles in chest; a few were distinctly uremic or septic, as evidenced by foul scanty urine, fever, dry skin, coated tongue, and mild delirium at night. In the latter cases (Nos. 11, 15, 22, 35, 40), also when the bladder had been greatly over-distended, preliminary treatment was resorted to, consisting of constant urethral catheter drainage, with irrigation of the bladder, salt solution enemata, ingestion of large quantities of water and urotropin. After ten days or two weeks of this treatment, improvement resulted in every case, and the condition seemed sufficiently good to warrant operation. In the great majority of cases this preliminary treatment was not considered necessary, and operation was performed within a few days of admission.

### DEGREE OF URINARY OBSTRUCTION.

In 30 cases there was retention of urine before operation. Twenty-five of these patients were absolutely unable to void and had to be catheterized; 5, while not having resorted to the use of the catheter, were merely dribbling from an overflow bladder. One patient had depended entirely upon the catheter for fifteen years, one for eight years and another for five years. Six patients were still able to pass more or less urine voluntarily. Two of these had used the catheter regularly for a number of years and had from 10 to 12 oz. of residual urine. One patient had a residual of only about 4 oz. at the time of operation, although he had had two previous attacks of retention requiring catheterization. In one case there had been a previous attack of retention relieved by the catheter, amount of residual at the time of operation not recorded. One patient had only 3 oz. of residual with frequency and difficulty of micturition for years. One patient (No. 1) had practically no symptoms of obstruction (the amount of residual is not recorded), the operation was done under a misapprehension, the prostate was considered to be malignant from the feel and cystoscopic appearance, and the source of hematuria; it proved to be a moderately enlarged gland showing merely glandular hypertrophy without evidence of malignancy.

### PRECEDING OPERATIONS.

One patient had had a suprapubic removal of a third lobe, another a partial perineal prostatectomy, both without relief. Two patients had had stones removed at previous operations. Two had had perineal section for drainage. In one case a papilloma had been removed by suprapubic cystotomy. In one case orchidectomy had been done for abscess of testicle. One patient had an extensive diverticulum which was drained suprapubically preliminary to suprapubic prostatectomy.

### CYSTOSCOPY.

Of the 36 cases of benign enlargement, in only 17 are cystoscopic examinations recorded. In a few, such examinations were made, but the records are missing. In a few cases, cystoscopy was impossible either on account of bleeding, pain or difficulty in passing the instrument. In a considerable number of cases it must be ad-

mitted this important examination was neglected. There is no doubt in my mind of the value of preliminary cystoscopic examination before prostatectomy, especially before perineal prostatectomy. In this way invaluable knowledge as to the shape, contour and intravesical proportions of the prostate, the presence of a median lobe or bar, the presence and size of stones, new growths and diverticulæ, can be gained. The estimation of the size and intravesical shape of the prostate is, I think, one of the most difficult things to determine in cystoscopy, and requires considerable experience checked by operative demonstration. It is a distinct advantage to the operator to have made the cystoscopic examination personally; the mental picture of the intravesical growth of the prostate, which it is hard to set down in words, gives one a grasp of the situation in undertaking a perineal prostatectomy which is a real if intangible asset.

Whether or not there has been a preliminary cystoscopic examination, a thorough digital exploration of the bladder should be made in every case, — before enucleation of the prostate in suprapubic cases, and after in perineal cases. This is essential and invaluable and will save many costly errors if always followed. In the elevated lithotomy position, so strongly insisted upon by Proust, and Young, for perineal prostatectomy, a movable stone in the bladder is apt to fall back into the fundus, and may easily be out of reach of the examining finger, or it may lie in a pouch; hence it is not safe to rely entirely upon digital examination for knowledge of this condition in such operations. A careful preliminary cystoscopic examination relieves one of anxiety on this score.

### CHOICE OF OPERATION.

I began by doing suprapubic prostatectomy. The first operation was done in February, 1906. The first few cases were highly satisfactory; on the fourth case there was considerable postoperative and secondary bleeding, which could not be controlled, and only stopped when the patient was nearly exsanguinated. The patient eventually made a complete recovery with an excellent result. This case, however, somewhat dampened my ardor for the suprapubic operation, and the next two cases, which were both fatal, one from shock and hemorrhage, the other from uremia, completed my distrust. I then took up the dissecting perineal method, the first case being done in May, 1908, and have continued to use this method since almost exclusively. I consider it the method of choice in the ordinary case, reserving the suprapubic method for the exceptional cases of enormous hypertrophy, or when the condition is complicated by the presence of a diverticulum, a tumor or a stone of great size, or an adherent stone, or when the bladder is filled with blood from an actively bleeding prostate.

My prime reason for preferring the open perineal prostatectomy operation to the suprapubic is that it is safer as far as life is concerned. This has been amply proved, I think.

The suprapubic enucleation has its strong points; it is a quick method, and easy of performance, except when the gland is small, fibrous and adherent, when it may be impossible, as admitted even by Freyer. The end results are excellent; if the patient survives the operation, he is almost sure of a good functional result. There is little danger of injury to the rectum or of incontinence, the bugbears of the perineal route; sexual power is often retained, although the ejaculatory ducts, I believe, are seldom spared. On the other hand, there is considerable shock, and often hemorrhage, which is difficult to control; also liability to sepsis and urinary infiltration.

The chief advantages of the open perineal method are that the operation can be done under the control of the eye, shock is markedly less, hemorrhage can be more effectively controlled, sepsis is usually inconsequential, fibrous or adherent prostates can be removed by morcellement. Sexual power can be preserved in a fair proportion of cases. The convalescence is quicker and more comfortable; the functional results are as good in the hands of the elect.

The technic is difficult and must be mastered to avoid two sequelæ of dire consequence, — incontinence and injury to the rectum. If the technical details of the Young operation are fully grasped, these accidents will be rare. The Young operation is not a total prostatectomy as is the suprapubic, a shell of prostatic tissue is left just inside the capsule, also surrounding the urethra and ejaculatory ducts. It has occurred to me that there might be a new growth of tissue from this source, giving rise to obstruction in the future. I have never heard of such a contingency, however; my own cases are for the most part too recent to give convincing data on this point.

The finger enucleation through a median perineal section is a method with which I have had no personal experience. It is open to many of the same objections as the suprapubic method, viz., blindness and inadequate control of hemorrhage, likewise to liability of injury to the rectum, and incontinence, the bugbears of any perineal operation. It is a quick method and seems to have given excellent results in the hands of its advocates. The mortality is low. I must, however, believe it is subject to many bad sequelæ.

### ANESTHESIA.

During the last year I have employed spinal anesthesia administered by Dr. Freeman Allen in 9 cases, 2 suprapubic and 7 perineal. The method has been highly successful, and I believe it to be a life-saving measure for these old and enfeebled patients. The only objection to it is that the Trendelenburg position cannot be maintained in the early stages of the operation, or at least only to a slight extent. This position though a help is not essential. The advantages of spinal anesthesia in my opinion far outweigh this one objection.

OPERATIVE TECHNIC.

*Suprapubic cases.* — Digital enucleation of the whole gland with the forefinger of the opposite hand in the rectum has been the method employed in all cases, with post-operative drainage through a suprapubic tube, later supplemented, as a rule, by urethral catheter drainage. In several cases gauze was packed into the cavity left by the enucleation for the control of hemorrhage, although this measure has been resorted to with some reluctance. In 2 cases the prostate was approached through a transperitoneal cystotomy wound; once after an unsuccessful attempt to excise an extensive diverticulum of the bladder, and once to give a better approach to a large vesical tumor which proved to be of prostatic origin. In both these cases the results were excellent, but the method is unnecessarily hazardous and I do not advocate it.

*Perineal cases.* — The method employed in these cases has been as close an imitation as might be of the technic so perfectly portrayed and demonstrated by Dr. H. H. Young. The only respect in which I have ventured to depart from his method has been in regard to the saving of that median portion of the gland which contains the ejaculatory ducts. I have not hesitated to sacrifice this median bridge of tissue in certain cases in order to get a better approach to the suburethral portion, and allow of a submucous enucleation of a sessile third lobe or bar. Pedunculated median lobes have been grasped and pulled down into the urethra and excised, although this procedure is fraught with some danger from hemorrhage. Persistent bleeding from this source in a private case was, I am convinced, a contributing cause of the fatal result which ensued. Care should be taken in such cases to ligate, crush or cauterize the pedicle; if the pedicle is large, the mass can often be enucleated from below without injury to the mucous membrane, which, of course, obviates the danger of bleeding into the bladder; any bleeding which may occur will be external, and can be controlled by packing. In dealing with median lobes and bars by the suburethral method, I have found it advantageous to replace the tractor by the forefinger of the left hand passed well into the bladder, as the sense of touch is of immense value in determining how much and where tissue should be removed.

Young makes a great point of the preservation of the ejaculatory ducts, arguing that it permits of the retention of sexual power, and obviates the danger of epididymitis. There can be no question but that preservation of the ejaculatory ducts is necessary to the retention of procreative power, a matter of little importance as a rule in these cases; but that the power of erection, a more important though by no means dominant desideratum, has any relation to the integrity of the ducts is open to doubt. The power of erection depends upon the integrity of the nerve supply; this may be injuriously affected possibly by the division of the main branch of the pudic nerve in a too wide dissection of the perineum, or more probably by section of the small sympathetic fibres, cavernous nerves, which run forward to the corpora cavernosa from the prostatic plexus, during the process of exposing and clearing the prostatic capsule. Blunt dissection is the key to the avoidance of this mischance.

That injury to the ducts does not affect the power of erection has been amply proved by the numerous cases of complete removal of the prostate gland, including the entire prostatic urethra, and ejaculatory ducts, by the suprapubic route, with subsequent retention of that power.

As to the avoidance of subsequent epididymitis by preservation of the ejaculatory ducts, I have been disappointed by the results in my own cases in which this was done. The occurrence of epididymitis, which will be taken up later, has been so frequent that the matter of ligature of the vas deferens in the scrotum as a routine measure is now under consideration

MORTALITY.

*Suprapubic cases.* — There have been 12 cases of benign hypertrophied prostates removed by the suprapubic route with 2 deaths, a mortality of 16⅔%, a very high rate. In one of the fatal cases (No. 8), operation should never have been attempted, as the patient was uremic and demented before operation, and just faded away after operation, refusing all nourishment and dying of inanition and uremia on the tenth day. In the other case (No. 11), death was directly due to operative shock, and hemorrhage.

*Perineal cases.* — There have been 24 perineal prostatectomies for benign hypertrophy with 2 fatalities, a mortality of 8⅓%. At the time this paper was compiled there had been only one fatal case, giving a mortality of about 4%, but while awaiting publication another case was taken on, which has since resulted fatally, thereby doubling the percentage. This was the case (No. 45) of a man sixty years old who had used a catheter for a year; his general condition seemed excellent. Two small lobes were enucleated by the usual technic under spinal anesthesia. The immediate convalescence was uneventful except for a moderate bronchitis. At the end of ten days he was up and beginning to walk about, with control of urination, some urine coming through the penile urethra. Two weeks after operation lobar pneumonia set in, involving the two lower lobes of the right side. In an access of sudden delirium the patient jumped out of a window into the snow. This exposure was followed by empyema. Two quarts of pus were drained from the right pleural cavity. In spite of efficient drainage the patient gradually failed, the left lung filled up with edema, and he died on the thirtieth day after operation. Autopsy showed unexpanded right lung, bronchopneumonia of left lung, the genito-urinary tract was in excellent condition, there was still an unhealed perineal sinus. The cause of death was wholly pulmonary.

The other fatal case (No. 17) was that of a man seventy-nine years of age who was operated on March 15, 1909. A tough fibrous and in-

flammatory gland was enucleated with considerable difficulty through the perineum, the prostatic urethra was slightly torn, the immediate convalescence was good, the patient regained control of urination on the ninth day. Although most of the urine came through the perineum, the wound was clean and granulating. He had been sitting up daily, was perfectly comfortable and the temperature was normal. On the thirteenth day the temperature shot up, and beginning facial erysipelas was discovered. Starting from the nose, this spread over his face and neck, was accompanied by high temperature and great prostration, necessitating his keeping in bed. Although the erysipelas subsided, hypostatic pneumonia developed and he died on the twentieth day after operation.

Including malignant cases, there have been 15 suprapubic prostatectomies with 2 deaths, mortality 13⅓%. There have been a total of 31 perineal prostatectomies with 2 deaths, a mortality of 6¼%.

The mortality for the whole series of 46 cases is 4, or 8.7%.

### COMPLICATIONS DURING CONVALESCENCE.

*Suprapubic cases.* — Of the 10 patients out of 12 who survived the operation, the convalescence was uncomplicated in 6. Three suffered from epididymitis, 30%; in one case in which there was severe and long-continued bleeding, there was double epididymitis. In no other case which survived was post-operative bleeding of consequence. In one case (No. 41) there was complete post-operative closure of the bladder outlet, from flap formation, a complication first described, I think, by Dr. A. T. Cabot. This required secondary operation and renewal of catheter drainage. The patient was removed from the hospital on the forty-second day against medical advice, with the suprapubic wound still open. He has not been heard from since. In all the other cases the wounds were closed at the time of discharge, and in all save one satisfactory interval urination was established. In this case (No. 37) there had been a previous partial perineal prostatectomy by another operator, and almost complete incontinence followed removal of the remaining portions of the gland by the suprapubic route. The first operation had doubtless injured the external sphincter, and the second the internal sphincter. The shortest stay in the hospital after operation was eighteen days; the longest, forty-six days. The average stay in the hospital after operation was thirty-three and one-half days.

*Perineal cases.* — Of the 22 patients who survived perineal prostatectomy, secondary hemorrhage occurred once. This occurred (Case No. 19) on the second day, following removal of the gauze packs; it was severe but brief, being completely controlled by repacking the wound. Since then the gauze wicks have not been removed for forty-eight hours, with no further trouble on this score.

Epididymitis occurred in 8 cases, 33%; in 2 of these after discharge from the hospital. In 3 cases it was severe, going on to abscess formation, requiring incision and drainage. Although the perineal wounds were undoubtedly infected in all these cases of epididymitis, this infection did not of itself seem to amount to anything in any case.

In 4 cases (Nos. 15, 16, 20 and 43) there was retention of urine after removal of the tubes, requiring drainage for a longer time; this was undoubtedly due to swelling and possibly infection, as there was epididymitis present in 3 out of 4 cases. This retention was transient in all cases, but was a disquieting complication while it lasted.

In none of these 24 cases was there any injury to the rectum.

As a rule, immediately after removal of the perineal tube there was interval urination through the wound with control. In some cases this function was considerably delayed, sometimes for a week, rarely for two or three weeks. Interval penile urination was established on the third day in two cases; this was the quickest. As a rule, it occurred at the end of about two weeks, in a few cases it was greatly delayed.

In 16 cases at the time of discharge there was normal penile urination: in only 2 of these were the wounds completely healed. In most cases there was still a small granulating area which in several instances leaked a few drops of urine at the time of urination.

In 6 cases a large part of the urine was voided through the perineal wound at the time of discharge; in 2 cases all the urine was so voided; there was, however, control of the act in all.

The shortest stay in the hospital after operation was thirteen days, the longest seventy-three days, the average was twenty-seven and one-half days. The patient who left on the thirteenth day (No. 32) had normal urination with a small granulating perineal wound without leakage, showing the possibilities of the operation in favorable cases.

### END RESULTS.

It is by the end results that the value of an operation should be judged.

*Suprapubic cases.* — Of the 12 patients operated on by the upper route, 2 died. One case (No. 41) already referred to, in which the complication of closure of the bladder outlet during convalescence occurred, requiring a secondary operation, has not been traced since discharge. There is no reason why the final result should not have been satisfactory, however. In one case (No. 37) in which the suprapubic operation followed an unsuccessful partial perineal prostatectomy, by another surgeon, the incontinence which followed unquestionably would not have occurred if the external sphincter had not been injured in the first operation. In the eight remaining cases the functional results were excellent. Two patients have died since leaving the hospital, one three months afterwards of pneumonia, one four years later of new growth of bladder; in neither were

there any symptoms on the part of the prostate. Six patients have recently reported themselves alive and well without urinary symptoms.

Data as to amount of residual urine are unfortunately meager; several of the patients lived at considerable distances and were able to report only by letter. In 6 cases in which it is recorded, the highest amount was 1½ oz. in a man who previous to operation had lived a catheter life for fifteen years; in the other 5 cases, it was less than 1 oz.

As to sexual power, data is still scantier. Two are known to have retained it; in one patient who underwent both operations it was lost.

*Perineal cases.* — Of the 24 patients operated on by the perineal route, 2 died; all the others have recently reported either in person or by letter. All have been relieved of obstruction. In 20 cases the amount of residual has been recorded; in only 2 has it exceeded 1 oz., and in those 2 it was as low or lower than that when last measured. In the 3 cases in which the amount has not been measured, there were no symptoms of obstruction. In two patients in whom the residual amounted to 3 and 8 oz. respectively, at the time of discharge, the bladder recovered its tone very shortly, and within a month or two, the residual had dropped to less than 1 oz. and 1 dram respectively.

There has been complete and satisfactory sphincteric control of the bladder in all but 2 cases. One patient (No. 10), the first one operated on by the perineal method, can hold urine only about one-half hour, when he begins to dribble; he wears a urinal. He had a perineal section previous to the prostatectomy which may have had something to do with the poor muscular control. Such a case could undoubtedly be much benefited by regular treatment, of which he has had none.

In one recent case a man of seventy-seven (No. 21) there is said to be occasionally slight leakage during the day when walking about, although I have seen no evidence of it on the three occasions on which I have examined him; none at night.

As previously stated, the great majority of patients left the hospital with perineal wounds not entirely healed; in 6 a considerable portion of the urine was voided through them. In all but 3 cases the wounds completely closed shortly after leaving the hospital; I am unable to give figures as to just when this occurred. In one case it was six months before the sinus finally closed.

In 2 cases, fistulæ have persisted. In one case (No. 23) the perineal fistula, which had persisted for a year after operation, causing the occasional leakage of a few drops during the act of micturition, was curetted out, but has recently reopened; it causes but slight inconvenience and the patient is not inclined to have anything further done. In the other case a minute fistula has persisted for one year, the patient regards it as of little consequence and has had no medical attention.

In one case (No. 42), the patient was seen six weeks after leaving the hospital; at this time all the urine was passed through the perineal wound, although at the time of discharge it was passed naturally. With considerable difficulty sounds were passed and the bladder irrigated. From this moment all perineal leakage ceased, and after two more treatments the wound had completely healed.

This case has convinced me of the importance of personally following up the after-care of patients until the wounds are healed, when possible. It is not safe to assume in all cases that the perineal wounds will take care of themselves if merely kept clean. While this is true of the majority, in a few, where there is a tendency for perineal leakage to persist, the passage of sounds, irrigation of the bladder and cauterization of the sinus will tend to prevent the formation of fistulæ. A little spur of granulation tissue at the point where the perineal wound joins the urethra may cause the deviation of a part of the urine through the perineum; unless this is corrected in time, the tract may become epithelialised and a persistent fistula ensue.

In no case as yet has a true stricture developed since operation (Case No. 42 was the nearest approach to this).

After-treatment is also indicated in cases of cystitis. The removal of prostatic obstruction will go far to cure a pre-existing cystitis, but in cases of long standing, especially those due to the colon bacillus, local treatment is advisable in addition. Four cases have suffered from cystitis since the operation. One (No. 12) is kept very comfortable by regular treatment in the Out-Patient Department. One (No. 19) is symptomatically well, but the urine still contains considerable pus with colon bacilli, in spite of treatment; there is probably a pyelitis present in this case. Two patients (No. 29 and No. 35) are troubled with considerable frequency of urination, undoubtedly due to cystitis; they have been without medical treatment. In every case in which the urine was clear and uninfected before operation, it has been a great satisfaction to find it equally so afterwards.

Data as to retention of sexual power are very incomplete. In 3 cases it is known to have been lost; in 2 there have been definite complaints on the subject. In 3 cases it has been fully retained.

### SUMMARY OF RESULTS.

A summary of the results obtained in these 24 cases of perineal prostatectomy shows that 2 patients died; in neither case was death directly due to the operation. All the others left the hospital in good condition with obstruction relieved. In 15 cases the end results have been excellent in every respect, all that could be expected or desired. In 2 other cases the result is marred only by the loss of sexual power. One patient has a persistent cystitis which is symptomatically controlled by regular treatment, otherwise well.

In four cases the results are not so satisfactory.

In one there is poor control of the bladder, so that the patient prefers to wear a urinal. In one other there is at times, under stress, lapses of control. Two patients have persistent perineal fistulæ; in one of these there is also some cystitis present.

*(To be continued.)*

## VACCINES IN PUERPERAL SEPSIS.

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AND

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DURING the past few years an immense amount of work has been performed, particularly in the English-speaking world, along the lines of vaccine therapy. Many highly trained specialists have used the method widely, with most encouraging results. Also many less skilled have employed it with less success. As a result, there is at the present time much confusion and uncertainty concerning the value of the new treatment, the scope of its usefulness and its limitations.

In furunculosis there is a practical unanimity of opinion that vaccine, properly administered, is by far the most efficient method of treatment. To a somewhat less extent the various forms of staphylococcus infection have been found to yield readily to these inoculations. Tuberculosis of various organs and tissues is quite generally admitted to be more readily eradicated when the use of tuberculin in minute doses is added to the other therapeutic measures employed.

To briefly summarize, in local affections of bacterial origin vaccines are at present rather widely recognized as very valuable adjuvants to the usual methods of treatment, and not infrequently render those other methods less important or even unnecessary. When general infections are considered, however, particularly those acute in nature, there is a much less unanimous opinion. Some claim that here vaccines are not only useless, but even harmful; while others, equally reliable, strongly uphold the opposite opinion. Certain it is that here the dosage must be much more carefully regulated by a more experienced observer than in the case of local lesions where even needlessly large doses seem to be often borne with impunity.

There are at present a number of acute infectious diseases, not infrequently characterized by a general dissemination of the bacteria throughout the body, in which the value of vaccine treatment is fairly debatable, even though from strictly theoretical considerations it should be useless. Chief among these may be mentioned pneumonia, erysipelas, typhoid and puerperal sepsis. The theoretical reasons why they should not be amenable to vaccines need not be considered in this paper as they are available to all without present unnecessary repetition. Thanks to Leary, of Boston, it has been clearly demonstrated that pneumococcus vaccine in pneumonia, when properly used, is without harm and probably gives rise to much benefit. The final results of his extensive clinical tests are looked for with much eagerness. Similarly, Ross, of Toronto, has demonstrated a fact frequently corroborated by others, that streptococcus vaccine is a valuable agent in reducing mortality, in checking the extension of and hastening convalescence in erysipelas. One of the writers of the present paper has elsewhere given his experience with typhoid vaccine where, with a considerable number of control cases, the mortality seemed to be diminished, the duration of the fever was less and the total residence in the hospital was shortened. During the past few months about twenty-five or thirty cases have been treated with vaccines, and thus far without any mortality, although upon admission some were critically sick.

It is, however, concerning puerperal sepsis that this article has primarily been written. On account of their connection with various institutions having maternity departments, as well as with a home for unfortunate girls, the writers have had a somewhat unusual opportunity of observing a quite large number of septic cases such as are now fortunately much less common than they have been in the past. Concerning the diagnosis of puerperal septicemia, a long discussion might be here interpolated. A difference of opinion would doubtless be encountered, some authorities dating its inception from the introduction of the bacteria into the uterine cavity, others placing it as the time of bacterial invasion of the blood stream and still others at intermediate periods. Such discussion is here omitted, although its value is distinctly recognized.

It will be perhaps sufficient to say that in the cases about to be cited, comparatively few were subjected to blood cultures, as on account of the usual acuteness and severity of the symptoms it was deemed wise to begin the treatment as soon as the microscope or the culture tube revealed the presence of streptococci in the uterus. It was, accordingly, upon this latter fact, in association with evidence in the blood of severe infection, and coupled with a distinct clinical picture of puerperal sepsis, that the diagnosis was usually made. In the great majority of the cases streptococci in pure culture were obtained from the uterine cavity; in a smaller number they were in association with staphylococci and in a very few instances staphylococci alone were found. It will be seen that in all fifty cases are reported. This includes all that have been treated, the good and the bad, the early and the late, the complete list being purposely given in order to show the failures as well as the successes, in this way giving a more accurate idea of the complete results.

Among this series will be found a few that received ante-partum prophylactic injection on account of bacteriological findings or unusual opportunities for possible puerperal infection. These all recovered. It is of further interest that

certain others who likewise received prophylactic treatment showed pure cultures of streptococcus in the uterus post partum, but without any clinical symptoms of sepsis or other complication. This was never noted in other normal patients not so treated. Among the fifty cases reported, four died within twenty-four hours of the first treatment, being practically beyond any hope of recovery when vaccines were first requested. Three others were moribund when inoculations were begun. Here life was possibly prolonged two or three days. Apart from these, there are forty-three patients, two of whom died and forty-one recovered. Of the two that died, one was operated upon for suspected pus tube, which was not found, dying six days after; the other was subjected to blood transfusion, dying within a few hours.

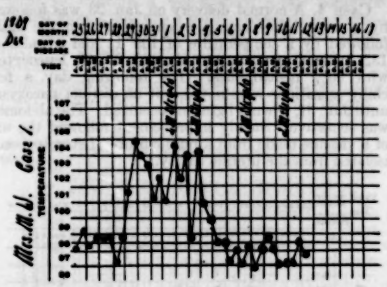
The method of using the vaccine was to administer a polyvalent preparation immediately after the diagnosis seemed definite, as determined by bacteriologic tests and to repeat as necessary until the autogenous preparation was ready, about twenty-four hours later. The vaccines were prepared by use of the minumum degree of moist heat, a method apparently followed by better results than when the earlier method was employed. Careful watch was made to ascertain any possible injurious effects or aggravation, but even in the worst cases none such could be demonstrated. On the contrary, a number of patients who seemed to be almost without hope of recovery made very happy convalescences. No claim is here made that the vaccines should replace other generally recognized methods. On the contrary, they should be used to assist all others that have proved to be of value. Unfortunately, such procedures of proven value are as yet only too few. In the series reported, a hot vaginal douche has been usually employed; very rarely, in only one or two cases an intrauterine douch. Curettage has not been performed in any instance. The bowels have been maintained in an active condition and remedies have been used when indicated. We have strongly advised leaving the patient as free from manipulation or local treatment as possible and believe that the results well bear out these instructions.

We prefer to draw no conclusions concerning the results of the treatment as a whole, as we realize that the ground is still debatable. We do, however, wish thus fully to detail our experiences, allowing the readers to decide from the results whether it is a method deserving of further study. Two facts may be given in conclusion: One is that no demonstrable harm has been often done to any person; the other, that patients have shown much improvement after the inoculations and have recovered when even the best clinicians have foretold a fatal termination.

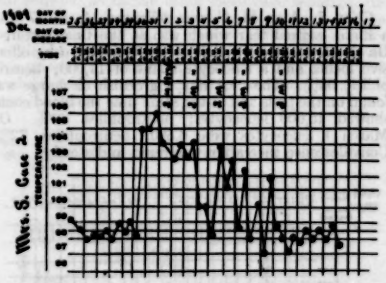
The following is a detailed description of the individual cases:

CASES TREATED.

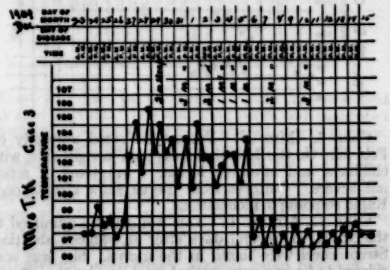
Case 1. Mrs. M. E. W. was delivered Dec. 26 after five days of ineffectual pain. Forceps were used. On the 29th she had a chill, followed by marked headache and backache. These continued to increase in severity until Jan. 2, then gradually subsided. Upon Dec. 31, streptococci in pure culture were found in the uterine cavity and an autogenous vaccine was made that was used the following day. This was followed by steady decline of all symptoms, including a marked inflammatory leucocytosis.




Case 2. Mrs. D. S. Five days after delivery this patient had a sudden rise of temperature to 105° F., immediately preceded by a chill. The following day the fever persisted. Upon the third day vaccines were used (streptococci) and were repeated as indicated on the chart. All clinical symptoms subsided and within a few days the patient was perfectly comfortable, this occurring even before the evening temperature reached normal.



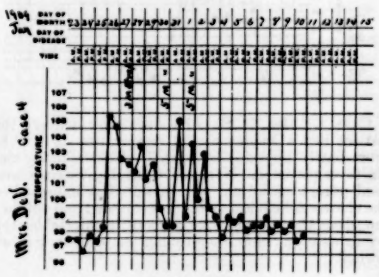

Case 3. Mrs. T. K. Following delivery by four days appeared a severe chill followed by rapid elevation



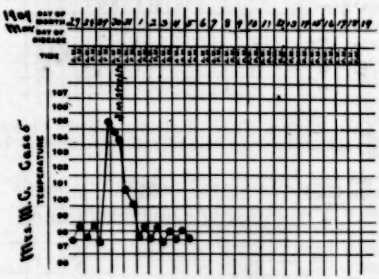

of temperature and the usual associated symptoms of sepsis, headache, backache, nausea and vomiting and

prostration. An autogenous vaccine was prepared. On the 29th, hysterectomy was seriously considered, hoping thereby to remove the original focus. Following the use of the vaccine, a steady amelioration of all symptoms became evident and this went on to an uninterrupted convalescence.

CASE 4. A normal delivery on Jan. 23 was followed by a severe chill lasting seven minutes on the 26th, followed by a temperature of 105° F. and a pulse of 132. Blood examination showed 24,000 leucocytes, with 90% neutrophiles. The following day a few chilly sensations were noted, but no distinct paroxysm until Jan. 31, when a light one occurred. The abdomen was sensative. Steady improvement followed the use of a vaccine made from a pure culture of streptococcus isolated from the uterine cavity.

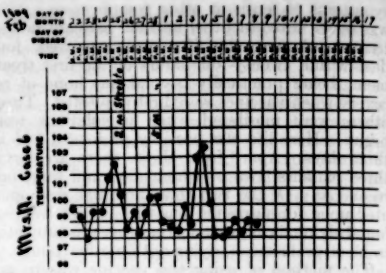



CASE 5. Mrs. M. C. was delivered March 17 with a slight vaginal tear which was at the time repaired. On the 29th a violent chill occurred, followed by offensive lochia and a leucocyte count of 14,000; neutrophiles, 96%. The next day a greenish discharge was found on the pads and at the same time the blood count showed 15,000 leucocytes; neutrophiles, 89%. On March 1 leucocytes were 6,500; neutrophiles, 72%. Convalescence thereafter was rapid and steady.

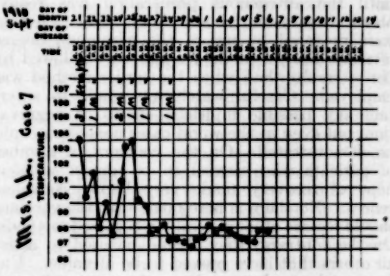



CASE 6. Mrs. N. Patient delivered normally on Feb. 22. On the 24th there was pain in right side, with chilliness and offensive lochia. Symptoms of sepsis not severe. Cultures from uterus show streptococci. Rapid response to inoculations.

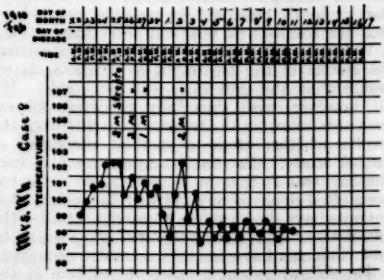
CASE 7. Mrs. L. L. This woman was admitted to the M. H. H. several days after an induced abortion. Streptococci were found in the uterus. She was considered to be in a very critical condition by the attending staff and was for two days on the "dangerous list." No surgical intervention was considered safe on account of the severity of the disease. Much to the surprise of the observers, a distinct improvement was




noted; at first slow, but within about two days much more rapid. Convalescence was complete.

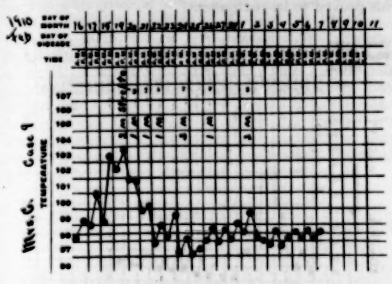



CASE 8. Mrs. W. In this case a steady rise in temperature was noted as beginning within a few hours of delivery. Chilly sensations, but no distinct chill occurred. Following the use of vaccines, the steadily rising tide of fever was checked and with but a temporary exception on the 2d, was transformed into a steadily falling one.

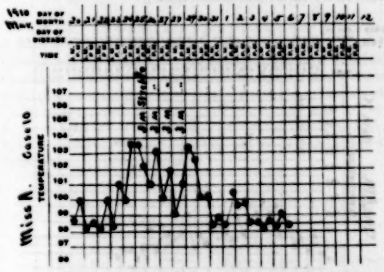



CASE 9. Mrs. C. Two days after delivery a febrile attack was ushered in by a distinct chill. This was accompanied by the usual symptoms characteristic of the average case of puerperal sepsis, including blood and bacteriologic study. The index of the progress of the disease is well given by the temperature chart, aggrava-

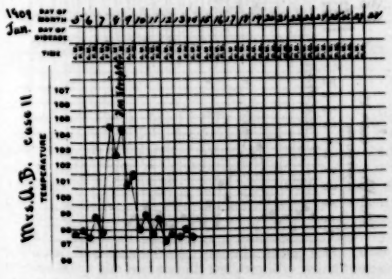
tion and amelioration occurring as the febrile condition indicates. The symptoms all steadily increased until the first inoculation, then as steadily subsided.




CASE 10. Miss A. This was the case of a young girl, unmarried. Upon the third day after a normal delivery the temperature began to rise and continued to do so for three days, with headache, nausea and chill. Immediately following the first inoculation, amelioration of symptoms appeared, together with decline of the fever. This was continuous and persistent.

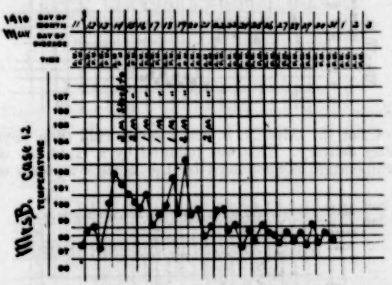



CASE 11. Mrs. E. B. Six days after a normal delivery there appeared a distinct chill followed by a marked elevation of temperature, headache and vesical

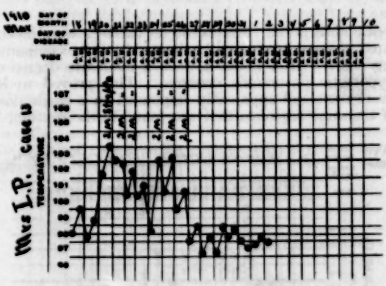



irritability. All subsided rapidly after inoculation. Streptococci in pure culture were obtained from the uterine cavity.

CASE 12. Mrs. B. This patient on the 13th and 14th was considered to be seriously ill by her attendants. The fever had been preceded by a chill and malaise, headache, nausea and general discomfort in association with a well-marked inflammatory leucocytosis. All seemed to indicate a well-marked septic condition. The first inoculation was a stock streptococcus vaccine. Later that organism was isolated from the uterine cavity. A steady improvement dated from the first inoculation. One injection on the 19th seemed to show a slight negative phase in the chart unaccompanied by any clinical one. Convalescence was uneventful.



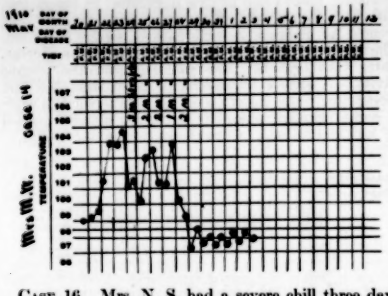

CASE 13. Mrs. J. P. A chill and fever occurred in this case within two days of delivery. Blood examination showed, as in the other cases here reported, distinct evidence of an inflammatory leucocytosis. Streptococci were found in the uterus. Following the first inoculation March 20 a slight amelioration was noted. This proved to be more marked from day to day until in about a week the temperature was normal and all signs of disease had disappeared.



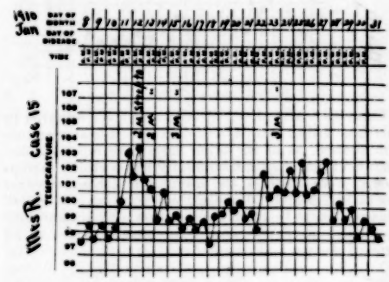

CASE 14. Mrs. M. W. had a severe chill the second day post partum. The following fever and associated symptoms of sepsis caused much alarm to her physicians. The entire clinical condition continued to steadily progress in an unfavorable manner till autogenous streptococcus vaccines were used. Very soon thereafter improvement was noted by the attendants. This continued with but slight and unimportant interruptions to a very favorable termination.

CASE 15. Mrs. R. A mild chill occurred three days post partum, after which came a rapid elevation of temperature. Streptococcus vaccine was made from a uterine culture. After inoculation all indications of sepsis apparently disappeared. In about ten days

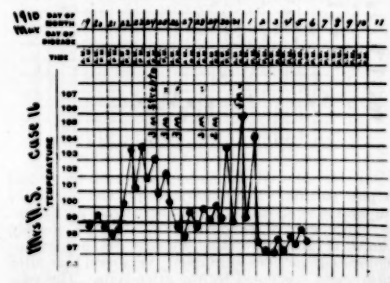
local symptoms of salpingitis were found. Operation revealed a small pus tube. Convalescence was uneventful.



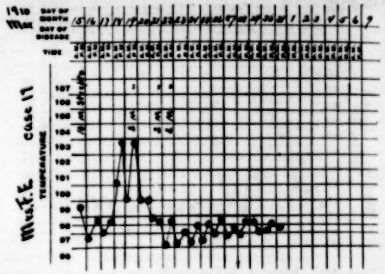

CASE 16. Mrs. N. S. had a severe chill three days after delivery. This was followed by a rapid rise of temperature accompanied by the usual symptoms of



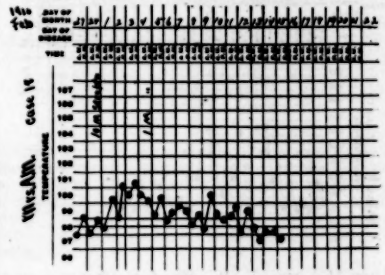

septic absorption. Streptococcus vaccines were inoculated, the result being well indicated by the accompanying chart. After about a week a moderate degree of hypostatic pneumonia occurred. This proved to be evanescent and apparently responded to a single dose of the same organism that was found in the sputum.



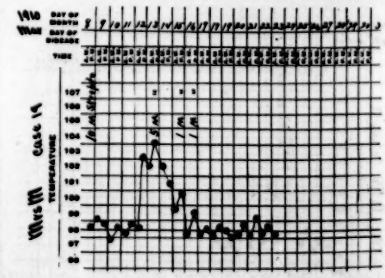

CASE 17. Mrs. F. E. A prophylactic injection of streptococcus was given on account of unusual exposure to infection. Two days after delivery a chill occurred, and after this fever, rapid pulse, malaise, headache and backache. Streptococci were recovered from the uterine cavity. Whether, however, this was a true case of sepsis or not, may not be definitely answered on account of the evanescent character of the disturbance, but at least it can surely be said that following the inoculation a very rapid subsidence of all symptoms was noted. This proved to be permanent.




CASE 18. Mrs. O. M. This patient had a very hard labor, including version and the use of instruments. Following this appeared mild indications of sepsis. Streptococci in pure culture were isolated from the uterine cavity. Whether the vaccines in any way influenced the condition cannot be positively stated. It did not progress to any greater severity and was followed by rapid convalescence.



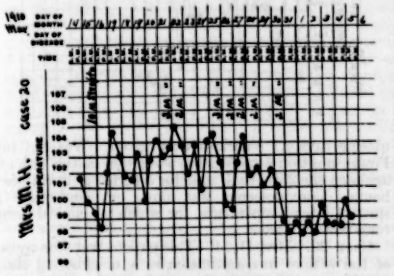

CASE 19. Mrs. M. This patient received a prophylactic injection of streptococci on account of exposure



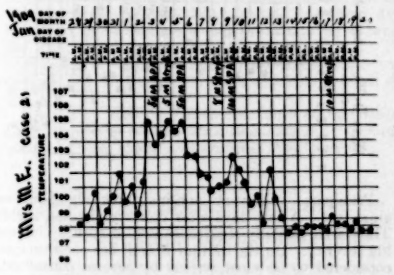

to possible infection. Four days post partum she had a chill with following fever, but not severe clinical symptoms of septic absorption. A stock streptococcus vaccine was administered as indicated. This was fol-

lowed by very rapid subsidence of the entire pathologic condition.

Case 20. Mrs. M. H. On account of an unusual amount of apparent exposure to possible infection, this patient was given a prophylactic injection of streptococcus just before delivery. In fact, at the time of injection, there was a not inconsiderable degree of fever. Immediately after the birth of the child a chill occurred, followed by high fever and rapid pulse. Cultures from the uterus showed streptococci alone. In spite of the temperature the patient did not seem to be very sick. On March 21, however, vaccines were first administered. From this time the patient began to improve clinically. Except for a slight hypostatic pneumonia, convalescence was uninterrupted.

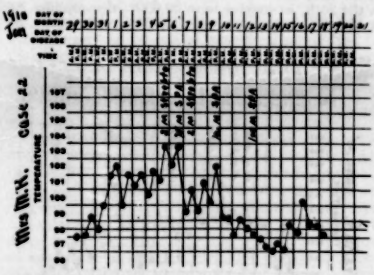



Case 21. Mrs. M. E. This patient was delivered in a bath-room Jan. 28, with a slight perineal tear. On the 31st she had a bad headache and passed a number of clots per vaginam. On Feb. 2 the lochia was offensive and abdominal cramps were present. Leucocytes, 19,000; neutrophiles, 90%. Oct. 3 she was delirious and tried to get out of bed. Several chills followed by pain in right iliac region. Was better the next day and steadily improved thereafter.

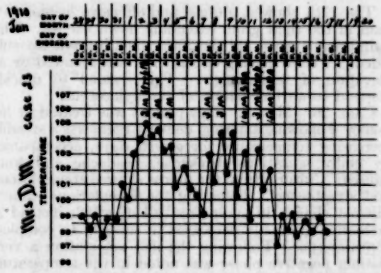



Case 22. Mrs. M. R. In this instance a rather gradual elevation of temperature was accompanied by mild symptoms of septic absorption. Cultures showed a mixed infection of streptococci and staphylococci. Vaccines of the former variety were used without apparent benefit, but with staphylococcus appeared distinct clinical improvement after each inoculation.

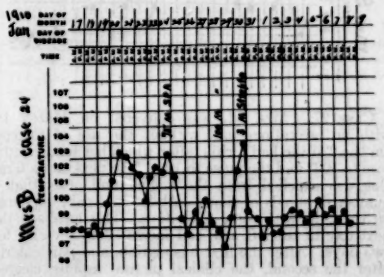
Case 23. Mrs. D. M. A primipara with history of previous bad leucorrhea. About three days after a normal labor she had a chill, with rapidly rising temperature and rapid pulse. The chill was repeated several times during the following three days. Cultures showed streptococci and staphylococci. Autogenous streptococcus vaccines were given and were followed by excellent clinical results for nearly a week, when some of the symptoms reappeared in a more mild form.




These, not yielding to streptococcus, were rapidly eradicated after staphylococcus vaccines were given.

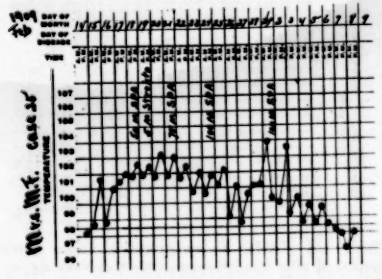



Case 24. Mrs. B. suffered from a severe chill three days after the birth of a child. Cultures taken at that time showed staphylococcus only. Vaccines were prepared and administered as indicated on the accompanying chart. This was followed by rapid subsidence of all symptoms. A second culture made a few days later showed streptococci in addition to the other organism. Therefore, when a second chill appeared, accompanied by the various febrile concomitants, an inoculation of streptococcus was given. The result is well indicated on the chart, which is also a close index of the course of the other symptoms.



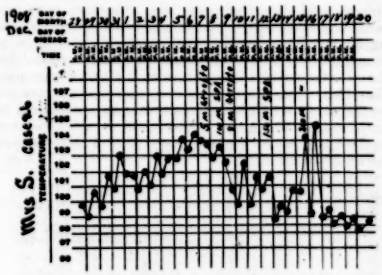

Case 25. Mrs. M. F. On Feb. 15 a normal delivery occurred with a slight vaginal tear that was immediately repaired.

On the 18th, leucocytes were 41,000; neutrophiles, 93%.
On the 20th, leucocytes were 50,000; neutrophiles, 85%.
On the 22d, leucocytes were 55,000; neutrophiles, 92%.
On the 25th, leucocytes were 39,000; neutrophiles, 86%.
On March 2, leucocytes were 36,000; neutrophiles, 84%.



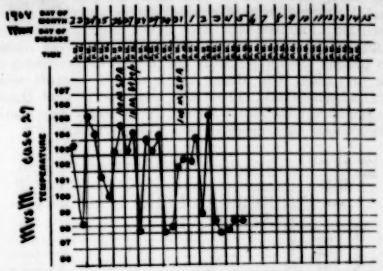

The 17th showed profuse and offensive lochia, with pain in the right groin extending down the leg. This pain became worse till the 20th, when it gradually subsided. A chilly feeling on the 27th was followed by an elevation of temperature. This seemed to quickly respond to an inoculation of staphylococcus.

CASE 26. Mrs. S. This patient was treated at her home. Following a normal delivery there was a steadily increasing temperature for eleven days, accompanied by chilly sensations, backache, headache and some nausea. Cultures from the uterus showed staphylococci and streptococci. Following the inoculations came a distinct change in symptoms, all of which instead of increasing gradually decreased in severity to complete convalescence. Following the last inoculation a very distinct negative phase was noted in the temperature chart but unaccompanied by other clinical evidence of aggravation.



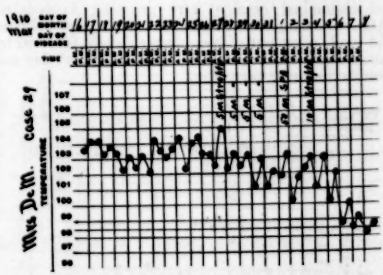

CASE 27. Mrs. M. was delivered on March 18, with no lacerations and without the use of forceps. On the 22d she had a chill, after which her temperature rose to 103° and the pulse to 108. The next day a large clot was expelled from the vagina and after that a number of shreds of tissue. Abdominal pain appeared on the 24th with some distention. This localized the next day in the left side and increased in severity for two days. After the first inoculation, and particularly after the second, the clinical picture rapidly cleared and the patient went on to a steady convalescence.

CASE 28. Mrs. E. I. On Nov. 13 a normal delivery was accompanied by a mild tear of the perineum that was immediately repaired. Membranes were ruptured by the physician's finger. On the 17th, marked abdominal soreness with chilliness appeared, accompanied by elevation of temperature and pulse. Leucocytes, 33,000; neutrophiles, 85%. Patient considered to be critically ill, with headache, lassitude and some stupor. Streptococci and staphylococci were found in the




uterine cavity. Vaccines were given. Was put into Fowler position with Murphy irrigation on the 19th and again on the 25th, each time for a period of twenty-four hours. Convalescence was slow, but continuous in spite of later temperature, for which no clinical symptoms were apparent.

CASE 29. Mrs. D. M. This patient was seen by one of the writers in consultation in a neighboring state. At this time the patient was examined, cultures were taken and the first inoculation administered. Later treatment was given by the attending physician who was in daily communication with the laboratory.




Primipara. Delivery non-instrumental, slight vaginal tear. A few days after delivery she had a chill. These were of daily recurrence and of steadily increasing severity. On the 27th of March her condition was considered to be most serious by several consultants. After cultures were taken autogenous vaccines were prepared and administered, but in the interim a polyvalent streptococcus preparation was used. The chills disappeared within three days, all the various symptoms steadily cleared up and complete convalescence occurred in a comparatively short time.

CASE 30. Mrs. H. H. Normal delivery, Feb. 21.

Feb. 23. Leucocytes, 18,000; neutrophiles, 76%.
Feb. 24. Leucocytes, 30,000; neutrophiles, 92%.

On the 22d there was a chill, followed the next day by headache and abdominal pains, increasing in intensity. The abdomen was somewhat distended and very sensitive. The lochia was offensive. On the 25th

abdominal hysterectomy was performed, at which time a diffuse peritonitis was found. Murphy irrigation and Fowler position was used, together with vaccines. Recovery was uneventful.

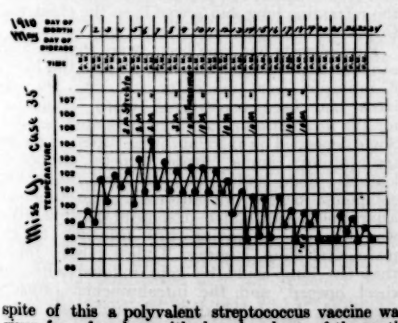
Case 31. Mrs. M. M. Confinement, May 10, without complications. Somewhat vacillating temperature after a few days, steadily becoming worse, with symptoms of peritonitis. On May 20 admitted to surgical service, M. H. H., and received vaccines. On May 29 abdominal incision was made, allowing escape of a considerable amount of pus. Wound closed and drained. Convalescence uninterrupted.

Case 32. Patient delivered at home March 9, with slight laceration. All went well for about nine days, when elevation of temperature and chills appeared. On the 22d she was admitted to the M. H. H. with temperature of 101.2 and pulse 130, following a chill. Under an anesthesia no condition was found to warrant radical operation, and after a uterine douche she was returned to her ward. Not showing much improvement, vaccines were requested and given. Clinical gain was soon apparent, which proved to be permanent in regard to the uterine condition. A somewhat vacillating temperature persisted, however, on account of which the patient was kept for some time in the hospital, but which was later found to be due to pulmonary tuberculosis.

Case 33. Miss E. S. An illegitimate pregnancy, in which infection occurred after instrumental intervention. The temperature chart is a good index of the rise and fall of the various allied symptoms, nausea, vomiting, chills, rapid pulse headache, etc. Leucocytes, 40,000; neutrophiles, 97%. A distinct amelioration of the very numerous and apparently serious symptoms was apparent upon the day following the first inoculation. This proved to be continuous to complete convalescence.

Case 34. Mrs. R. This patient showed a slowly but steadily rising temperature from the day following her delivery. The associated symptoms, while not very severe, were steadily increasing in intensity. A single injection upon the 4th did not apparently in any way check the progress, but a second one three days later was more successful and proved to have begun the incline back to normal of all the symptoms. The alternation of staphylococcus with streptococcus vaccine seemed to prove even more satisfactory than did the latter alone.

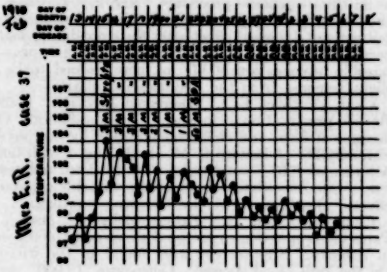
Case 35. Miss G. In this instance cultures taken from the uterus showed organisms similar to pneumococcus in size, shape and cultural characteristics. In




spite of this a polyvalent streptococcus vaccine was given for a few days with slow decadence of the septic symptoms. The decline was apparently much hastened, however, by the use of an autogenous preparation of the apparent pneumococcus.

Case 36. Miss A. J. The exact clinical condition here cannot be stated with certainty. Clinically, the case was said to be one of puerperal septicemia by all the attending physicians. An earlier febrile attack subsided spontaneously; the second one was accompanied by a chill and more severe symptoms than the first, but also subsided rapidly after the administration of vaccines.

Case 37. Mrs. E. R. About three days after delivery the temperature began to rise steadily. At this time cultures from the uterus showed streptococcus alone and in abundance. Following inoculation the septicemic symptoms steadily decreased in severity. Intra-uterine douches were at first given, three times daily, following which appeared symptoms of abdominal inflammation, distention, etc. The distention increased in severity but was apparently due, largely at least, to absence of peristalsis. Operation on Feb. 24, about two weeks after delivery, showed about a teaspoonful of pus near the Fallopian tube, well walled-off. Convalescence thereafter was very rapid.




Case 38. Mrs. G. W. Three days after childbirth this woman began daily chills, followed by high temperature. Autogenous vaccines were used and were followed by distinct clinical benefit. Local symptoms of peritonitis appeared, for which operation was performed. A very little pus, less than a teaspoonful, was found walled off in the pelvis. Vaccines were continued daily with rapid subsidence of all clinical symptoms. The temperature was less amenable, however, it vacillating as indicated without corresponding subjective or objective indications.

Case 39. Mrs. A. W. S. A uterine culture two weeks after delivery showed streptococci and staphylococci. Patient very neurotic and with marked anemia. Had several severe chills. Vaccines were used and were followed by complete recovery.

Case 40. Mrs. E. R. In this instance the temperature went up gradually during two days, associated with a rapid pulse, headache and backache. An autogenous streptococcus vaccine was administered once only. Owing to a change of service no repetition of the inoculation was made. She seemed to be doing well for about a week, when the fever and associated symptoms returned. On the 14th of April, not being satisfied with her progress, she left the hospital in which she was, against the advice of her physicians, and has since been lost trace of.

Case 41. Mrs. A. M. Five days after delivery a sudden rise in temperature was accompanied by severe headache, nausea and vomiting and offensive lochia. A single inoculation of streptococcus seemed to give

some slight amelioration. Blood transfusion was decided upon. Death occurred a few hours after the operation.

CASE 42. Mrs. A. G. A chill occurred the second day post partum. The febrile and septic symptoms continued to get worse for five days thereafter. When the patient was delirious and supposed to be hopeless, vaccines were requested. The first inoculation was followed by some amelioration of symptoms. Operation had already been decided upon and was performed on the 15th. Following this all symptoms steadily increased in severity and despite autogenous vaccines death occurred on the 22d.

CASE 43. Mrs. P. This patient was seen in her home, where she was considered to be beyond hope of recovery by a skilled consultant. Cultures showed streptococcus. Vaccines were given at intervals of three days and were followed by a slow but steady recovery.

CASE 44. Mrs. H. K. was delivered May 14, a breech presentation necessitating the use of forceps. Three days later chills and fever began and continued. Was admitted at the M. H. H. May 20 with temperature of 105° and pulse above 120. Curettage was performed as an almost hopeless procedure. Vaccines were begun the following evening and were continued for four days but without apparent effect after the second day, death occurring on the 30th. The only result here was a possible prolongation of life as there seemed to be a slight response from the first two inoculations.

CASE 45. Mrs. E. L. Delivered July 21 at home. Breech presentation — forceps. Child stillborn. On account of fever and chills was curetted by her physician July 28. Admitted to M. H. H. Aug. 2 with temperature of 100° F., and pulse 136, delirious and restless. One inoculation was given without apparent effect. Death occurred the following morning.

CASE 46. Mrs. D. Patient delivered Dec. 21. Pains in lower abdomen on the 25th, steadily increasing in severity. Streptococci were found in the uterus. On the 28th blood showed: Leucocytes, 12,000; neutrophiles, 97%. She was practically moribund when the first inoculation was given. At first there was a distinct amelioration of symptoms, but this proved to be merely temporary, death occurring in about three days.

CASE 47. Mrs. B. A Russian who could not speak English. Admitted to the M. H. H. on Jan. 17. No history obtainable. On admission was moribund and showed a large, tender uterus, from the cavity of which were washed shreds of necrotic tissue. Not benefited by any method of treatment. Death occurred within a few hours of the first inoculation.

CASE 48. Mrs. A. G. This woman had been sick with the disease for five weeks prior to her admission into the hospital. She was practically moribund when admitted. Vaccines seemed to render some increased resistance and to give rise to slight temporary amelioration. Death occurred ten days later.

CASE 49. Mrs. B. A criminal abortion was performed a few days prior to admission into the M. H. H., March 30. She was found to have general peritonitis; also a uterus much enlarged and boggy. Uterine irrigation was attempted, but without result. On April 1 a single inoculation was given a few hours prior to death, but withcut apparent effect.

CASE 50. Mrs. J. G. This woman had high forceps delivery March 31. Admitted to M. H. H. April 3 in a semi-moribund state, when, after examination, it was decided that nothing could be done. Vomiting was almost continuous and the patient was evidently in much pain. Blood on the 5th showed: Leucocytes, 14,000; neutrophiles, 95%. Death occurred the same day, no effect of the inoculation being apparent.

## INTRATHORACIC INSUFFLATION ANESTHESIA: APPARATUS AND CASES.*

BY ALBERT EHRENFRIED, M.D.,

*Surgeon, Mount Sinai Hospital; Surgeon, Boston Consumptives' Hospital; Assistant in Anatomy, Harvard Medical School.*

SURGERY of the thorax is to-day passing through the same phase in its development that characterized abdominal surgery of thirty or forty years ago. Until recently the thoracic cavity was, to the surgeon, unexplored territory. Intervention was restricted to the use of the needle for exploratory purposes and for aspirating the pleural and pericardial sacs, to thoracostomy and rib resection for drainage of empyemata, and to occasional thoracoplasties. In rare instances adventurous souls had overstepped these limits, but without assurance. Within the past few years, however, a small group of pioneers have blazed a trail into this unknown land.

In abdominal surgery the main problem which confronted the experimenter was the providing against sepsis. Our technic has now encompassed that, and we face the strange difficulties of thoracic surgery with greater confidence. The first major problem, the control of the pressure within the lungs during operation, has already been satisfactorily solved, and it is of the methods of preventing collapse of the lung that I wish to speak.

The danger of pneumothorax after perforation of the parietal pleura has always stood as the greatest obstacle to the advancement of intrathoracic surgery. In so great awe has it been held that men like Bardeleben, Roser and Bilroth advised strongly against taking any risk of damaging the pleura in removing tumors of the chest wall. Krause and Tuffier originated the method of detaching the pleura and conducting exploration extrapleurally. Bazy made a small incision in the pleura and immediately plugged it with his exploring finger. Sencert tried to meet the danger by admitting the air gradually through a small puncture. Delorme advised the formation of adhesions between visceral and parietal pleura by the injection of a chemical irritant some time previous to operation. Pean and Roux incised the pleura, seized immediately the retreating lung and sewed it to the chest wall to prevent complete atelectasis; and so on.

Physiologists had long been aware that animals could be kept alive by blowing air into the lungs, if provision were made for its exit. On this basis had been constructed many appliances for the insufflation of air in asphyxiated persons. Some depended on intralaryngeal tubes; some on tracheotomy canulæ, made of metal, rubber or leather. Some had a simple bellows, others had compound bellows for alternately injecting and aspirating the air, which, in some of the apparatus, was warmed. Applying this principle to experimental lung surgery, Tuffier (1897) found that the lung could be kept inflated with the chest opened, and the intrabronchial pressure regulated, by insufflation through an intra-

* Read before a clinical meeting of the staff of the Mount Sinai Hospital, March 15, 1911.

laryngeal tube. Quénu accomplished the same results with a helmet or box, containing air under pressure, into which the animal's head was placed. Then Kuhn and Lotsch devised the double tube, which allowed for the back-flow of the insufflated air. Soon after, Volhard, Hirsch, Sollman and Robinson demonstrated that oxygenation of the blood could be maintained without inflation of the lungs by supplying a constant stream of oxygen directly at the bifurcation of the bronchi.

Matas, of New Orleans, was one of the first to apply the principle of insufflation to human surgery. With Bloom, he modified the Fell-O'Dwyer apparatus for intermittent intralaryngeal insufflation by adding a pressure manometer, air filter and provisions for supplying chloroform vapor or oxygen to the air. This apparatus was successfully applied by Parham in a case of sarcoma of the chest wall (1898). About the same time Doyen devised an apparatus, differing mainly in that it had a double-acting pump. This form of artificial respiration, useful, indeed, in an emergency, has not been found practicable for continued anesthesia with the thorax open.

The first important step in the advancement of human lung surgery was the introduction of the negative pressure chamber of Sauerbruch. He discarded the idea of inflating the lung by positive pressure within in favor of maintaining a negative pressure without. His cabinet was a room, — to which he added later a lock chamber for entrance and exit, — within which the surgeon and his assistants worked upon the patient, whose head was outside. The air within the chamber was maintained at a negative pressure of about 5 mm. of mercury by means of an electric pump. The patient was isolated against the negative pressure, except for his thorax, by means of a rubber collar about his neck, where his head was thrust through the window, and a rubber bag tied about the waist and enclosing the lower half of the body, connecting with the outside air. Communication with those without was by telephone.

From the first operation upon a human being in Sauerbruch's cabinet (performed by Mikulicz in 1904) dates the new era in thoracic surgery. The principle was adopted without reserve, cabinets were built in several institutions and operations were performed which a few years before had been deemed impossible, such operations as resection of the lung for tumors and bronchiectasis, exploration of the lung and mediastina, resection of the esophagus for carcinoma.

Under the stimulus of this new interest, means were sought to render the procedure more simple and thus more widely applicable, for the apparatus of Sauerbruch was both costly and cumbersome. Brauer found in his experiments that the original method of maintaining distention of the lung by means of positive pressure was less complicated and equally efficient. He accomplished this by placing the anesthetist and the patient's head within a cabinet, into which air was pumped under pressure, the operation being performed in the open room. Later the apparatus was further simplified into a box or helmet containing the head of the patient and the hands of the anethetist, and now positive pressure is usually applied by means of a mask which sets down over the patient's face.

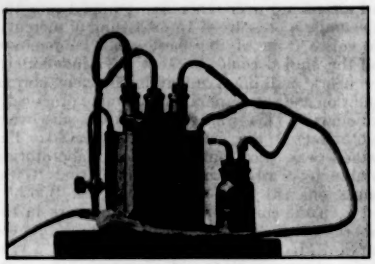
At first there was some hesitancy about accepting the positive pressure method from suspicion that it might have some deleterious effect upon the lung tissue, but Dreyer and Spannaus showed by their experimental investigations that physiologically there was no difference between positive and negative pressure in their effects. Willy Meyer, of New York, and Robinson, of Boston, have combined the advantages of the two methods in so-called "differential" cabinets adaptable for work under either positive or negative pressure. Otherwise, the positive pressure method is now generally favored.

Two years ago, Meltzer and Auer, working in the Rockefeller Institute, found that if a tube about two thirds the diameter of the trachea was passed nearly to the bifurcation of the bronchi, and air passed over ether was pumped into this tube under a pressure of 15 to 20 mm. of mercury, the entire front of the chest could be removed and the animal could be kept alive indefinitely, the heart and lungs maintaining their normal condition and the diaphragm remaining practically stationary. This was a momentous discovery and attracted the attention it deserved. The method was tried out in various laboratories, notably by Carrel, who announced that it was simple, efficient and safe. Dr. W. M. Boothby and I, in the course of experimental work in the Laboratory for Physiological Research at the Harvard Medical School, took it up about a year ago and were so favorably impressed with its advantages as to simplicity and safety over the cone method of anesthesia that we have adopted it as a routine in all animal operations, with a distinct lowering of mortality.

The adaptability of this technic to the human being was at once apparent. Elsberg, of New York, soon had an apparatus ready which was fitted for this use, and within a few months he anesthetized the first case by this method, a patient of Dr. Lilienthal's, with lung abscess. Last month he reported a total of thirty cases and described his perfected apparatus.

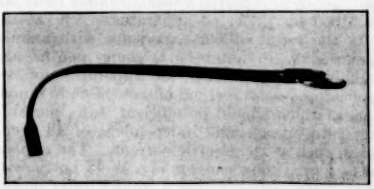
As the result of our experience with animals (about sixty in number) I, some months ago, attempted to construct an apparatus for the application of this method of anesthesia to human beings, which should be efficient, safe, portable, simple to operate and independent of all accessories, such as the electric current. The apparatus as I use it now consists of a Wolff bottle with three necks, sitting within a copper water jacket, and a foot bellows. By means of cocks on the outside of the jacket, the stream of air from the bellows can be carried through the hot water, over the top of the ether (contained in the Wolff bottle), or through the ether when a particularly strong vapor is desired. Air and ether vapor may be mixed in any proportion. Connected with the delivery end of the apparatus is a safety valve

and pressure regulator consisting of a bottle of mercury into which a tube is plunged. The depth of the tube in the mercury, which is adjustable, represents the maximum of pressure which is allowed within the apparatus; if for any reason, such as a spasm of the glottis, the pressure should rise, the valve "blows off" automatically and danger from interstitial emphysema is avoided. In our early experience we employed a dial manometer registering in millimeters of mercury, to record the pressure, but we have found that the pressure bottle answers as well for all practical purposes. The apparatus is provided with a device to prevent droplets of condensed ether being carried over into the larynx. The air or mixture is supplied at a practically constant temperature of about ten degrees above room temperature; if the operation is to last over half or three quarters of an hour, the contents of the water jacket should be replaced. The air supplied may be filtered and moistened.



Apparatus for intratracheal insufflation anesthesia.

For an intratracheal tube we use a French lisle catheter, 22 to 24 F., moistened in hot water to render it pliable, a new and sterile one for each case. Soft rubber tubes have the advantage of standing sterilization by boiling better, but they are less easy to introduce. The chief difficulty with this method of anesthesia so far has been the introduction of the tube. We now use a simple



Introducer, for the introduction of the tube into the larynx.

introducer, a laryngeal forceps with sleeves attached for grasping the tube near its extremity, similar in principle to the introducer of Doyen. After considerable pains to produce the proper curve, — working on frozen sections and cadavers, — we have made an instrument which can be guided into the larynx in a matter of seconds, with the mouth gag in place and the left forefinger on the epiglottis, without the necessity of using a head mirror or electric illumination, or changing the patient on the table to and from the Rose position, as is necessary with the direct laryngoscope.

I have tried this apparatus now four times on human beings, as follows:

CASE I. Feb. 21. Patient of Dr. W. M. Boothby. Interscapulothoracic amputation. Ether, Dr. H. B. Loder. I introduced the tube on a stylet, properly curved. After some minutes it became evident that tube was in esophagus, and tube was removed, and no attempt made to reintroduce it. Recovery without complication.

CASE II. Feb. 28, Boston Consumptives' Hospital. Tuberculous synovitis forearm, necrosis skull. Ether, Dr. H. B. Loder. Patient given preliminary ether with difficulty, choking up with mucus to the point of cyanosis. Tube introduced readily with electrically illuminated Chevalier Jackson direct laryngoscope. Patient immediately became quiet, color improved, mucus disappeared and an easy anesthesia of one hour twenty minutes was maintained on 5 oz. of ether. The apparatus demonstrated how lightly anesthetized the patient could be kept and how effectively and quickly the grade of anesthesia could be controlled by means of the cocks. At the end of the operation ether vapor was blown out of the lungs by blowing in fresh air until no odor remained on the breath. Patient waked immediately to nearly full consciousness and suffered no nausea or vomiting. Patient doing well and no complication or untoward effect traceable to the etherization has developed.

CASE III. March 1, Boston Consumptives' Hospital. Massive empyema of long standing, cyanosis. Ether, Dr. Loder. The laryngoscope was in place when the lamp burned out. On account of extremely poor condition of patient, no further attempt made. Patient doing well.

CASE IV. A case of chronic empyema (Boston Consumptives' Hospital) several times previously operated, upon whom I did a radical and extensive thoracoplasty this morning (March 15). Ether, Dr. Boothby. The tube was readily introduced by means of the introducer already described. Condition was excellent throughout an etherization of one hour twenty-five minutes. Anesthesia quiet, without mucus and, although lying upon side of sound lung, no cyanosis. Gentle and rapid recovery, without nausea. Seven ounces of ether used.

The advantages of the method are apparent, even with so limited an experience. The air passages are kept dry of mucus, and inhalation of mucus, blood or vomitus is prevented by the return current of air about the tube. The anesthesia can be run at low pressure until occasion calls for higher, and after the occasion is passed it can again be lowered. The respiratory rate is an index to the amount of pressure. There are no bands of elastic constriction about neck or abdomen, and the anesthetist has free access to the patient's face and mouth without interfering with the pressure. No more ether is used than is needed within the lung; the ether vapor is washed out with air as soon as the anesthesia is over, and, therefore, recovery is rapid; the chance of excess ether or ether-laden mucus getting into the stomach is slight, accord-

ingly, recovery is gentle. The operator works under normal conditions, and his field is not limited by apparatus; the anesthetist may remain at some distance from the patient. There is no danger of the glottis falling back and closing the trachea. If the heart stops beating from any cause, the most efficient form of artificial respiration apparatus is immediately at hand. The apparatus is not complicated by machinery and requires no expert; with it there is no danger of overpressure.

This form of anesthesia has a wide scope of application outside of the field for which it was originally designed. In operations upon the face, mouth and neck it has obvious advantages. The operating field is unobstructed. Run at a low pressure, it will insure adequate ventilation of the lungs and obviate the possibility of aspiration of mucus or blood and thus lessen the frequency of secondary pneumonia following face and mouth operations in the elderly. Green reported a successful excision of epithelioma of the nose under its use, and Lilienthal has stated its advantages in cases of intestinal obstruction, obviating the danger of drowning in fecal vomitus, or of secondary pneumonia from the inhalation of septic matter. The apparatus is inexpensive and is adaptable for any form of vapor anesthesia, such as rectal ether, vapor-mask anesthesia, intra-oral vapor anesthesia and anesthesia through a tracheotomy opening (as for excision of the larynx). Complete with foot-bellows, it packs readily into a small suit case, and can be easily carried.

The apparatus as it stands represents a total expense of about twenty-five dollars. For about the same sum, one can add the inessential luxuries of an electric motor (one-eighth horse-power), rheostat and blower with a regulating by-pass to carry off the excess of air, to replace the foot-bellows, as well as some electric device for maintaining heat, — either an incandescent bulb within the water tank or a heating coil about the delivery tube. These are, however, unnecessary; they constitute an added complication and are advisable only where the apparatus is to be permanently installed, or where one is sure of having at his disposal the proper current.

## THE EXTIRPATION OF THE TONSIL BY ENUCLEATION: PARTLY INSTRUMENTAL, PARTLY BY THE USE OF THE FINGER.

BY L. M. FREEDMAN, M.D.,

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Historically, the method described herein is an old one. Too far back in the history of medicine has this operation been done for any one of the present day to claim originality in using it. The method is new only in its modifications, one of which is here briefly considered.

It is of interest to note that, so far as we know, the finger method was employed before any other tonsil operation. In the year A.D. 10, Celsus described a method of enucleation thus:

"Tonsils . . . should be loosened by working the finger around them and then torn out; but when this is not practicable, they should be seized by a hook and excised with a scalpel."

From the time of Celsus to that of the most recent, literature makes no mention of the finger method. However, other forms of completing the tonsillectomy with forceps and bistoury are given from the earliest times. The use of the cold wire snare to complete the enucleation is not mentioned until late in the nineteenth century; but, what might, in a measure, be compared to it, is the employment, in early times, of the ligature before cutting off the freed tonsil. Ambrose Paré, 1509, mentions the ligature of hypertrophied portions of the tonsil, but does not advise excision. His pupil Guillemeau speaks of excision of portions after ligature but does not advocate the removal of the tonsil entire. After the ligature method had fallen into comparative disuse for nearly a century, it reappeared, after 1740, under the influence of Wiseman, whose method was to ligature portions and then to excise. Since then it has become one of the recognized surgical procedures.



Fig. 1.

The purpose of this paper is to demonstrate the superiority over others of the finger method when combined with some of the present-day means for accomplishing tonsillectomy. The advantages in the use of this method have been found to be: the easy and quick separation of the tonsil from its bed; the ability to palpate with the finger behind the tonsil an abnormally large or malplaced artery; and the minimized chances of hemorrhage. The only disadvantage which this method may have is the somewhat slower healing observed in cases where the traumatism of blunt finger dissection between the tonsil and the soft palate structures has been more severe than usual. But with experience and care this condition may be forestalled.

The armamentarium consists of a mouth gag, one tonsil tenaculum, a tongue depressor, two Leland knives, — one right, one left, — one double-

edged knife of the Smithwick type, and a tonsil snare of the Farlow type.

In children, general anesthesia, usually ether, is used; in adults, local anesthesia is preferred.



FIG. 2.

For the latter, submucous injections into the anterior pillar, the posterior pillar and into the supratonsillar fossa of a .5% cocaine or novocaine, or 1% of quinine and urea hydrochlorate, are used.



FIG. 3.

There are five steps in this operation:

1. Separation of the anterior pillar. (Fig. 1.)
2. Incision into the supratonsillar fossa. (Fig. 2.)
3. Finger dissection of the tonsil anteriorly and posteriorly. (Fig. 3.)
4. Snare engaged over the tonsil and tightened. (Fig. 4.)
5. Handle of the snare turned and tonsil gradually excised. (Fig. 5.)

In detail, this operation is performed as follows: With the gag in place, and the tongue depressed, the right Leland knife is introduced between the anterior pillar and the tonsil of the right side, as in Fig. 1. With a slightly sawing motion downward the lower half or three quarters of the anterior pillar is separated from the tonsil. The tonsil is then seized with the tenaculum forceps and drawn inward and forward toward the median line, thus making tense the mucous membrane, which is continuous from the soft palate over the tonsil. The double-edged knife is then introduced at the superior margin of the tonsil, between the tonsil and the soft palate, severing the mucous membrane and entering the supratonsillar fossa. (Fig. 2.) This incision is continued forward between the tonsil and the anterior pillar and backward between the tonsil and the posterior pillar.



FIG. 4.

The forefinger is then introduced in the supratonsillar fossa (Fig. 3), between the tonsillar capsule and the tonsillar sinus. With the finger used as a lever downward, forward and then backward, the tonsil with its capsule intact is gently separated from the tonsillar sinus until all but its very base is free from attachment and hangs loosely in the foreward part of the mouth, though still firmly held in the grasp of the tenaculum forceps. In fact, in some cases it is possible, after this manner, to separate entirely the tonsil;

but, in order to be sure of leaving intact the posterior pillar attachment in the tongue, it is wiser, ordinarily, to leave the rest of the tonsil for final separation by the slow crushing and cutting force of the snare.

The loop of the snare is then placed over the tenaculum forceps until it passes the tonsil and engages firmly the very root of the tonsil (Fig. 4); it is then tightened and the ratchet fixed. The head is inclined forward and the tenaculum forceps and snare handles held together. The ring handle of the snare is slowly turned until the tonsil is entirely cut off. Occasionally, if the snare has not been properly adjusted over the very base of the tonsil, a small piece of tonsil is observed hanging loosely between the pillars. This is so free that the punch forceps will easily remove it at once.



Fig. 5.

The employment of this method over all others in our clinic has characteristically reduced the bleeding and has quickened the time of operation and has produced less injury to the pillars — a frequent source of hemorrhage in other methods.

Objection has been urged that the finger more than a metallic instrument is a source of possible infection; this is a possibility, but one that is hardly worth consideration. Surgical asepsis and antisepsis of the hands are in these days sufficient to insure perfect safety in this regard. Further, as an instrument of intelligence and power, the finger has no equal. (Grateful acknowledgments are hereby made to Dr. S. H. Rubin for the drawings accompanying this article.)

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The late Dr. Samuel Alexander bequeathed all his surgical instruments and pathologic and anatomic preparations to Cornell University Medical Department. — *Jour. Am. Med. Asso.*

## Clinical Department.

### LATE CÆSAREAN SECTION — REPORT OF A CASE.

BY STEPHEN RUSHMORE, M.D.,

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Cæsarean section, under the most favorable circumstances, has given such gratifying results that it is not surprising that the operation should be resorted to in some of the less favorable conditions. When the baby is in good condition, and the mother, just before or at the beginning of labor, normal except for some bony deformity which makes delivery in the natural manner impossible, the indications are clear. In cases of placenta previa, eclampsia, prolonged labor with ruptured membranes, there is not yet unanimity of opinion as to the advisability of abdominal operation; and, if operation is performed, whether trans- or extra-peritoneal, whether with or without hysterectomy. If infection of the mother is probable, the question is still further complicated.

Some surgeons refuse to operate if the patient has been subjected to vaginal examination; others, unless they are sure of the observance of strict aseptic precautions during the examination. Some operate even in the presence of known infection. The limitations of the operation can be determined only by a careful study of many cases under varying conditions. However, to refuse operation, when mother and child are in good condition, because the mother *may* be infected, is to take a position which, I think, will not be sustained by experience, and which is not based on humanitarian grounds.

The case reported is of interest because of the gratifying result after fifteen hours of labor, three with membranes ruptured, when delivery with forceps on the floating head had been attempted in vain. While the only definite conclusion that can be drawn from one favorable case is that operation was the right thing at this particular time, the case is thought to be of sufficient interest to merit recording. Credit is due to the physician who first saw the case, for his careful asepsis during examination and manipulation of the attempted vaginal delivery.

Mrs. M. K. Gyn. No. 675. Age, twenty-seven.

*Past history.* — Patient has always had some trouble with right hip; thought it was rheumatism. Following a fall eleven years ago, began to be worse; considerable lameness and pain in right leg. Patient was never confined to bed on account of hip. Twenty years ago, patient had an attack of measles after considerable trouble with throat.

*Menstrual history.* — Onset, sixteen; irregular and painful.

*Married history.* — Has never been pregnant before.

*Present illness.* — On July 3, 1910, 9 A.M., patient began to have labor pains. About 8 P.M. operation had been decided upon, the patient was etherized and forceps delivery attempted. Soon after midnight, the patient was admitted to the Carney Hospital.

*Examination.* — Patient a dwarf, with some deformity of the lower spine and apparently of the pelvis also. Temperature, 100; pulse, 120. In pretty good general condition. Child rather small, position occiput-right-posterior; head not engaged. Fetal heart 144, regular, good quality. External conjugate, 16 cm.

*Vaginal examination.* — Cervix, 5 cm. in diameter, easily dilatable further. Head could not be made to enter pelvis. Fontanelles not felt as caput thick and patient rather sensitive. Promontory of sacrum could not be felt. The pelvic arch fairly wide; outlet of pelvis apparently large enough if head could have entered pelvis.

*Operation.* — The abdomen was shaved and painted with tincture of iodine. Under ether, it was again treated with the iodine just before making the incision. Median abdominal incision from the umbilicus to 8 cm. above the symphysis. The uterus was delivered and packed around with numerous dry towels. Uterine incision from top of fundus downward on anterior wall about 10 cm. long. Considerable meconium on opening amnion. Male child easily delivered, slight contraction ring around neck of fetus. Placenta and membranes removed and cavity packed with dry gauze. Uterine incision closed in two layers, No. II chromic catgut — interrupted — for the muscle, not including peritoneum or endometrium; and a continuous chromic catgut suture to approximate the peritoneum and superficial part of the muscle. Before tying the last sutures the dry gauze was removed from the uterine cavity and a large gauze drain, sopping with Wright's solution (sodium chloride and sodium citrate), was introduced, passing from the uterus to the vagina. Closure of abdomen in three layers; tension sutures of silkworm gut.

Ergotole, MXX, given hypodermically at time of skin incision and on removing placenta. The uterus reacted well, no excessive bleeding. Pulse, 154, on leaving the table, but quality good.

The baby was slightly etherized, but breathed well from the first and soon cried. The body was thin, the head relatively large. It showed the marks of the forceps, good application. On the third day weighed 6 lb. The baby was put to the breast for a few days, then bottle fed entirely.

*Convalescence.* — The patient never looked very sick, in spite of considerable abdominal distention. Pulse about 100. Temperature irregular, up to 102°, reaching normal on the fourteenth day. The uterine drain removed in thirty hours. There was some induration of the lower part of the incision, from which about 2 drams of pus evacuated on the tenth day. Patient out of bed on the twentieth day, and went home on the twenty-sixth day following operation.

*Examination on discharge.* — Small granulating area in lower part of abdominal incision. No abdominal tenderness. Some increased resistance above symphysis.

*Vaginal examination.* — The promontory of the sacrum could not be felt. The right side of the pelvis easily felt to the pelvic brim and back almost to the sacro-iliac synchondrosis, thus presenting marked flattening in the oblique diameter. The left brim of the pelvis felt for very short distance. Fundus rising half way to the umbilicus.

NOTE: February, 1911. — Baby very well, normal in every way. Mother in good general health. Some pain in right hip and leg (under treatment in the orthopedic department for tuberculosis of hip). Menstruation reappeared Nov. 3, 1910. Very severe pain all over abdomen, chiefly in mid-line low down. On Dec. 8, flow less and pain less. On Jan. 11, flow normal, pain only in region of umbilicus — not severe.

## Medical Progress.

### PROGRESS IN DERMATOLOGY.

BY HARVEY P. TOWLE, M.D., BOSTON.

### THE TREATMENT OF SYPHILIS BY THE DIOXY-DIAMIDO-ARSENOBENZOL "606" OF EHRLICH-HATA.

ALTHOUGH Dr. Pellier[1] has limited this article entirely to a review of the German work with "606," he has covered the field so completely and marshaled his data so systematically that the result is one of the clearest and most comprehensive expositions of the subject which has yet appeared. Below is given a somewhat free translation of much of Dr. Pellier's review. Here and there certain unessentials have been omitted, and occasionally, for brevity's sake, the full text has been condensed.

Dr. Pellier has divided his review into three parts. In Chapter 1 he presents the facts relating to the history of the evolution of "606," its chemistry and the experimental work. In Chapter 2 is given a summary of the various technics, and in Chapter 3 the method from the clinical point of view.

#### CHAPTER 1 — HISTORICAL, CHEMICAL AND EXPERIMENTAL STUDY.

In the opening paragraph it is stated that "arsenical medication is no novelty in syphilography. In its various forms arsenic has been used many times with advantage, but without any one of its preparations having proved itself a therapeutic agent worthy of replacing definitively and in every case mercury and its compounds. To-day the question is raised once more apropos of Ehrlich's ideas and his preparation '606.'"

The good results obtained by the use of atoxyl[2] in sleeping sickness led by analogy to the use of the drug in syphilis. Hailed by Spiethoff and others as a specific, atoxyl gave such poor results in the hands of Curschmann, Tomaczewski, Zeissel and Mertchewski, etc., that the latter denied its supposed superiority to mercury. Moreover, intoxications and grave ocular accidents were observed so frequently after its administration as to lead to its gradual abandonment.

Having treated dourine by the combined use of atoxyl and the sublimate of mercury, Uhlenhuth conceived the idea of using a chemical combination of atoxyl and mercury in the treatment of syphilis. In fowl spirillosis, and in the experimental syphilis of rabbits, his results were brilliant. In man, Lesser, Mikley, Blascho and Boetke obtained good curative effects from this atoxylate of mercury without any serious mishaps. Boetke, however, was obliged to revert to the use of mercury in two cases out of fifteen. Hoffmann did not consider the drug superior to mercury, and preferred his own method, the use of insoluble preparations of mercury and

[1] Dr. Pellier: Ann. de Dermat. et de Syph., November, 1910.
[2] Atoxyl is the sodium salt of paramidophenylarsenic acid and its arsenic is pentavalent (Fig. 1).

arsenic either in the form of arsenious acid or Fowler's solution. Bergrath also considered it inferior to mercury, at least in the tolerated dose. In man, a dose proportionate to that which gave to Uhlenhuth and Mulzer the brilliant results observed in the rabbit would necessitate the injection at one time of 0.32 gm. of mercury and 0.24 gm. of arsenic.

Ehrlich, who had given especial study to atoxyl, thought that it could be replaced with advantage by arsacetin, the sodic salt of the acid acetylaminophenylarsenic, that is, by an acetylized atoxyl. This product was less toxic than atoxyl and was very active against the spirilli of recurrent fever and at the same time effective against trypanosomes. Ocular accidents, however, did occur. Neisser abandoned its employment, while Borcher proved that it had almost constantly a deleterious action upon the kidneys.

The next product, arsenophenylglycin or spirarsyl, numbered 418 in Ehrlich's series, marked a distinct advance along the way of this new therapeutic method. Whereas in the preceding compounds the arsenic was present in penta-atomic form, in spirarsyl it occurred in its tri-atomic state.[3] Ehrlich believes that arsenic will give results in the organism only when used in this tri-atomic form and that, therefore, it is along this line that atoxyl and its derivatives must be modified.[4]

Wendelstadt and Schilling having demonstrated that spirarsyl was extraordinarily active against animal trypanosomiasis, Alt was asked to undertake the investigation of its action upon man. In 100 cases of old syphilis, Alt found the Wassermann reaction to have disappeared in 16 and to have been diminished in 27, while some improvement was noted in cases of beginning paralysis. Neisser, after having had good success in the treatment of syphilis in monkeys, reported good results in severe cases of human syphilis, in tabes, in leucoplasia and in cases in which mercury had failed.

Alt very quickly abandoned the treatment by gradual increase, "by steps," in favor of the use of a single concentrated attack, the injection of 0.8 to 1 gm. of arsenophenylglycin in two consecutive days. He had noted that the prolonged administration of repeated small doses produced organic lesions in the test animals, while, provided the animal survived the intoxication, a single large dose left these same organs intact. This again confirmed Ehrlich's idea of a single massive dose. Alt's observations as to the harmful effects of repeated small doses upon the organs were confirmed by Klein, Eckard, Ulrich and Scherschmidt and by Raven.

This interesting therapeutic discovery leads by natural transitions to a consideration of some of the principles of Ehrlich's chemotherapy.

The protoplasm of the parasites possesses groupings, called chemo-receptors. When the medicament is more strongly attracted by the receptors of the parasites than by those of the living organs, the remedy is said to be parasitotropic; in the contrary case, organotropic. Ehrlich has demonstrated that the arsenicals are rendered efficacious, in the case of the trypanosomes, by an arseno-receptor in the parasites which is able to fasten them to the arsenic in its tri-atomic form[5] and that a purely chemical diminution of this affinity suffices to produce types of arsenic-resistant trypanosomes.

Ehrlich believes that it is of great importance to the vitality of the cells of the higher organism that they should only rarely, if possible only once, come in contact with a dose smaller than the dose immediately harmful. The best remedy will be that which kills all the parasites of the infected organism in a single dose; that will be the "therapia sterilisans magna." The first experimental study will be to determine the smallest fatal dose or, better, the largest non-fatal dose, for the test animals, — the dosis tolerata. Then after infection of the animal with a fixed dose of parasitic material and study of the process thus evoked, the dose which will cause the disappearance of the parasite must be found, — dosis curativa. The best therapeutic agent will be that in which the fraction $\frac{\text{dosis curativa}}{\text{dosis tolerata}}$ is the smallest.

Ehrlich found the best experimental material in spirillosis of rats, mice and fowls and experimental syphilis of rabbits, because in these infections the parasites in the blood could be counted with the microscope. The infected blood was diluted with non-infected blood to such degree that it contained, in a given amount, a determined number of parasites and when injected intraperitoneally produced an infection of moderate intensity. After having been tested in the test tube, the remedy was given either by mouth or hypodermically. In the latter case, the action was estimated by the motility of the parasites as seen upon the illuminated dark field. In animals, and always in spirillosis of fowls, the parasitic effect was measured by counting the number of spirilli in the blood by aid of the dark-field illumination. The absence of parasites under the microscope, however, was not an absolute proof of their disappearance from the organism, for an emulsion of the organs of an animal apparently cured sometimes successfully inoculated other subjects. The control of the cure by the possibility of a reinfection should also not ignore the fact that the previous evolution of the disease has created a certain degree of immunity in the animal.

In the course of his experiments Ehrlich met with what he called the "effectus contrarius." For example, in the test tube, certain dyes of the thiaziene series exhibited a certain effect upon the spirilli of recurrent fever in that, in a mixture of infected blood and a dilute solution of the dye-stuff, the spirilli became motionless and an injection of the mixture would infect either not at

[3] Having, therefore, the double molecule, as in "606" (Fig. 5).

[4] Compare the penta-atomic form in Figs. 1 and 4 with the tri-atomic form in Figs. 5 and 6.

[5] Figs. 5 and 6.

all or only feebly. In the body of the infected animal, however, the injection of a concentration of methylene blue, for example, five hundred times as great as that which was parasiticidal in the test tube for a few days diminished the number of spirilli but then apparently stimulated their increase.

The dyes of the benzidin group, although possessed of a certain power against trypanosomes, gave uncertain results in the test tubes and showed a parasiticidal effect in the injected animal only when the infection was much attenuated.

Atoxyl, which yielded some success in man to Glaubermann and Iverson, gave no results in mice when injected subcutaneously. Its preventive administration by mouth appears to have retarded development without influencing the intensity of the relapses. Arsacetin was found to be a little more active. Arsenophenylglycin was not preferable.

The series of the substances which had a real sterilizing action upon experimental spirillosis begins with arsenophenol (Fig. 3). Injected in large doses (1-2000) it gives permanent results, but a single larger dose (2-1500) is not efficacious. In the same way tetrachlorarsenophenol and tetrabromarsenophenol must be given in multiple doses in order to effect a cure.

The acid dichlorphenolarsenic, although possessed of a more favorable relationship of the dosis curativa to the dosis tolerata, was discarded because mice showed lasting nervous complications.

Hata's researches have been particularly concerned with an arsenophenol, the dioxydiamidoarsenobenzol (No. 592) (Fig. 5) and its chlorhydric salt (No. 606) (Fig. 6). Dioxydiamidoarsenobenzol is a clear yellow powder which oxydizes so easily that it must be kept in sealed tubes. It is not soluble in water without the addition of soda. Its dichlorhydrate is slowly but completely dissolved in water, giving an acid solution which is resorbed by the organism with difficulty. The addition of soda lye produces first a monochlorhydrate, a neutral salt, which is immediately precipitated. The addition of soda in excess redissolves this, forming an alkaline salt.

To obtain the sodic salt of dioxydiamidoarsenobenzol, Hata prefers to use "606" rather than "592," for, while the result of the two methods is identical as regards efficiency and toxic properties, less alkali is required to dissolve the fresh neutral precipitate from "606" than the dry powder of "592."

The following letter is from Mr. E. F. Billings, of the Billings Clapp Company, manufacturing chemists, in reply to a request for a simple explanation of the chemical manipulations by which Ehrlich transformed a toxic substance into one comparatively non-toxic:

"EHRLICH'S '606' AS SEEN THROUGH A PRACTICAL CHEMIST'S SPECTACLES.

"You say that your chemistry is a little rusty as the professors used to teach it, and you got all tied up in a knot trying to trace the chemistry of '606'?

"It is really very simple if you get away from technicalities and reduce it to some basis which will enable you to compare it with something familiar.

"At college they did this by comparing molecules with the bricks which an architect uses to build a building with. I never liked that comparison, and it seems to me more true to nature if we consider the molecule a machine, and the chemist the inventor, who takes different mechanical contrivances of well-known action and puts them together in a machine which as a whole will perform some very beautiful, and possibly very delicate, operation.

"To understand how Ehrlich goes to work, I think that this is the way you want to look at it. Consider the molecule as the *machine* which he is trying to *invent*, and the parts which must be put together as the atoms of our well-known series of atomic substances. Another reason why a molecule can be considered more clearly as a machine than as a brick is that the properties of the molecule are due more to its motion than to the actual matter of which it is composed; that is, if you build a building of red bricks, you have a red building, but if you build a molecule of white phenolphthalein and white carbonate of soda, you get a pink building. What you really do is, you take a molecule which you call phenolphthalein, and work it in with another device which you call carbonate of soda, and the product of your machine is that pink solution. The molecules which you work with are traveling with enormous rapidity and at a speed such that they collide at a rate of perhaps five billion collisions a minute, and these are the cogs in the several cog wheels of the machine.

"Kelvin illustrates the *size* of the molecules by saying, if a globe the size of a football is magnified to the size of the earth, and each molecule magnified in the same proportion, each molecule would be between the size of a round bird shot and an orange.

"Just as we may liken the molecule of a compound to a machine built to work, so we may consider the atoms, which form the molecule, as the wheels and cams and other parts of the machine, for an atom is always absolutely the same as every other atom of the same kind, just as a wheel of twenty cogs will always turn one twentieth as fast as a pin revolving so that it strikes one cog of the wheel at every revolution. It makes no difference whether you tip the wheel upside down or inside out, it is always just the same, and that is the way with any particular kind of atom. The spectroscope shows that an atom of hydrogen in a star so far away that the ray of light which we catch in our spectroscope now had started on its journey from the star long before America was discovered, by its refraction shows that it is exactly the same as any other atom of hydrogen that we find in our chemical work.

"With our thought centered on this imaginative conception of the atoms of matter as machine parts, and the molecules as machines, consisting of different combinations of those atomic parts, we can, in a rough way as it were, watch Ehrlich in his machine shop trying one contrivance on the machine he is building, and then another and another.

"The main part and starting point is the benzol ring, as we call it, which is the pedestal of all our aniline colors and drugs (Fig. 2).

"The discovery of the medical properties of atoxyl was the first step which brought to mind the possibilities of such a class of products. Keeping our imaginary machine picture, we see in atoxyl the benzol ring base of our machine with an arsenic combination at the top (Fig. 1). Arsenic was not new in this department of therapeutics, but arsenic in this kind of

a machine (the aniline base) was new and proved to have valuable properties, but it insisted on attacking the host as well as the parasite.

"To understand how Ehrlich went to work, look at the matter from the standpoint of the machinist again. How to make a machine along similar lines to atoxyl which would more perfectly perform the functions desired and at the same time would not have the trick of making trouble. The proper name of atoxyl by grace of chemical nomenclature is paramido-benzol-arsenate of sodium, which, being interpreted, means sodium salt of a compound consisting of the benzol ring with amid in the para position and arseniated (Fig. 1). That part of this machine which Ehrlich started to modify was the cog wheels, etc., of the amid group attached to the benzol ring.

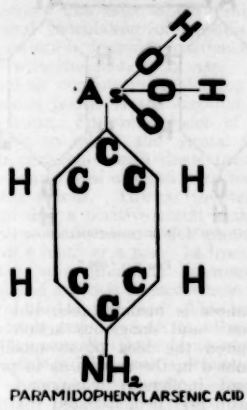



Fig. 1.

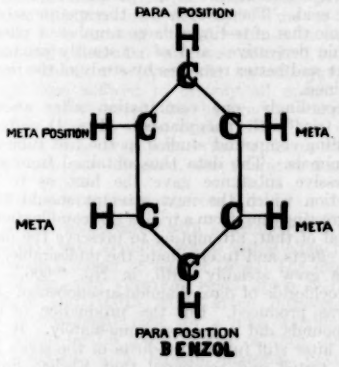



Fig. 2.

"What Ehrlich set out to do was to develop that property which we call selective affinity, which simply means that the chemical coming in contact with a lot of different things will show a property of selecting certain particular things in that mixture to attach itself to.

"For instance, methylene blue colors only nerve tissues, and neutral red colors only the cell granules.

"The machine which Ehrlich was trying to build was simply a machine which would have this selective affinity for the parasitic agents of infective disease, and leave the rest of the body alone, just as, for instance, methylene blue attacks the nerve tissues only.

"Ehrlich's method of developing of this machine, the reasoning which he followed and the imagination involved in the conception is one of the greatest achievements of mental process over material agents, and this is true whether the '606' turns out to be a specific or merely a product useful in certain combinations of disease. The medical properties of most chemicals have been discovered haphazard, but here is a man who dissects the tiny molecule to find out which of its wheels is responsible for the action he wants and which for the action he must eliminate, and by analogy and imaginative logic he determines the amid group to be the key to the action of the molecules. After a long tedious series of experiments, he finally secured approximately what chemical action he wanted in the preparation called '592' which goes by the graceful name of dioxydiamido-arsenobenzol.

"But the machine did not yet operate successfully until another attachment was added; by sticking on the amid group hydrochloric acid, the '606' was then a fact instead of a figment of the imagination.

### *"Building the Machine.*

"To visualize the procedure here is benzol (Fig. 2)

"Oddly enough, by putting an atom of oxygen between one carbon and hydrogen atom, the volatile naphtha-like benzol is changed into our well-known carbolic acid. (Figs. 2 and 3.)

"The process of manufacture adopted by Ehrlich begins with this carbolic acid molecule, and by analogy with 'atoxyl' he tries putting a molecule of arsenic acid into the machine exactly opposite the oxygen of

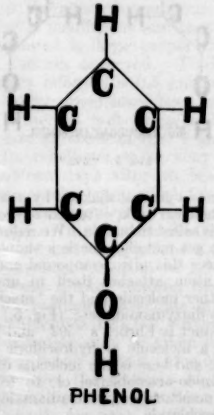


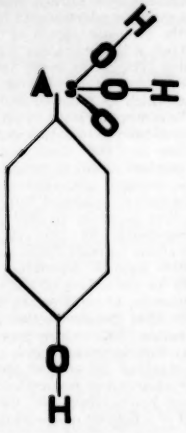

Fig. 3.

the carbolic and gets para-oxy-phenyl-arsenic acid. (Fig. 2, 3, 4.)

"This is treated with nitric acid in such a way that

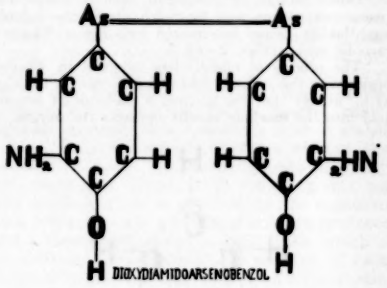
the nitro group is attached to the 'machine' at what is called the meta position. (Fig. 2.)

"This product is meta-nitro-para-oxy, etc.



PARAOXYPHENYLARSENIC ACID

FIG. 4.



DIOXYDIAMIDOARSENOBENZOL

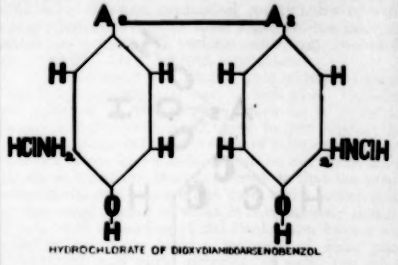
FIG. 5. "592."

"Now comes a general shakeup by a treatment very common in chemical work, — to take oxygen out of molecules, which is called reduction. We reduce the mineral zinc oxide to get metallic zinc is a simple illustration. Ehrlich reduces this nitro compound and in so doing the arsenic atom attaches itself to another arsenic atom of another molecule and the 'machine' doubles up, giving us dioxydiamido, etc. (Fig. 5.)

"This product is Ehrlich's '592' and the final step is to attach a molecule of hydrochloric acid to each amine group, and here is the molecule of '606' (Fig. 6), dioxydiamido-arsenobenzol or, to follow the full description nomenclature, metadiamidoparadiarsenodiphenylhydrochloride.

"This name is, you see, a description of the molecule which is the hydrochloride, of the amine group in the metaposition, of arsenic in the paraposition, of two phenol or carbolic acid molecules (compare Figs. 2 and 6)."

Ehrlich claims for Bertheim, Hata and himself absolute priority in the discovery of dioxydiamido-arsenobenzol. Its composition is not based upon a simple happy modification of atoxyl,* but is, on the contrary, the result of long synthetic work. That there is a relationship between the



HYDROCHLORATE OF DIOXYDIAMIDOARSENOBENZOL

FIG. 6. "606."

two substances is incontestable, but it is the "murderous" and dangerous action of atoxyl which inspired the idea of so modifying the elements joined in the arsenic as to produce an efficient and inoffensive compound. Ehrlich and Bertheim first demonstrated that the composition of atoxyl is quite different from that given out by Bechamp thirty years before and that it is a sodic salt of the para-aminophenylarsenic acid. Thenceforth the therapeutic scheme became that of testing a large number of phenylarsenic derivatives and of constantly producing better and better remedies by study of the results obtained.

Accordingly, one combination after another was tried with phenylarsenic (Fig. 4) and the resulting compound studied in the test tube and in animals. The data thus obtained from each successive substance gave the hint as to the direction which the next attempt should take. Progressing thus, from a trial of this combination to a trial of that, attempting to preserve the desirable effects and to eliminate the undesirable, the series grew steadily until, in No. "606," the hydrochloride of dioxydiamido-arsenobenzol (Fig. 6) was produced. But the production of new compounds did not cease immediately. It was only after still further products of the series had been tested and compared that Ehrlich finally returned to "606" and gave it his preference.

The final choice was based upon tests of the curative effects of the different compounds, the relationship of the curative to the tolerated dose, their toxic effects, solubility, etc.

No. "606" having finally proved its superiority in the laboratory and in the animal tests, Hata was given charge of its further investigation. In the spirillosis of fowls he established the relationship between the curative and the tolerated doses as follows: Atoxyl $\frac{C}{T}=\frac{1}{2}$; arsacetin =

* Compare Figs. 1, 5 and 6.

$\frac{1}{3.3}$; arsenophenylglycin = $\frac{1}{3.8}$; atoxylate of mercury = $\frac{1}{2.5}$; dioxydiamido-arsenobenzol = $\frac{1}{3}$; amido-phenolarsenoxide = $\frac{1}{3}$.

Two manifestations of syphilis in rabbits were studied: the syphilitic keratitis and the syphilitic scrotal lesion. The lesion which results from the experimental inoculation of syphilis upon the rabbit's scrotum possesses particularly striking analogies with the chancre in man.

The technic consists in implanting in a small subcutaneous pouch in the scrotum a piece of infected tissue. For transmission of the disease from rabbit to rabbit the scrotal inoculations are made preferably with tissue from a specific keratitis as it is less charged with bacteria than the scrotal lesions. Toward the tenth to the fourteenth day a positive result manifests itself by a small red infiltration which gradually attains the size of a lentil or a pea. In from four to six weeks the skin gradually necroses, becomes crusted and a lesion is formed whose borders are raised and hard as cartilage. This lesion usually persists from two to four months, sometimes longer. Occasionally there is no ulceration but only a nodule riddled with spirochete.

Hata preferred the scrotal lesion for therapeutic study because of its easy and constant accessibility.

In the treatment of syphilitic keratitis the minimum dose employed was 0.006 gm. per kilogram, given intravenously. Two or three weeks were necessary for the cornea to become completely clear, but cure was obtained in every case without a relapse. In scrotal syphilis a single dose sufficed to destroy all spirilli completely and at once; the chancre was completely healed in two or three weeks. The limit of the curative dose was found to be from 0.01 to 0.015 gm. per kilogram, the tolerated dose 0.1, so that $\frac{C}{T}$ was, therefore, from $\frac{1}{7}$ to $\frac{1}{10}$.

Neisser has treated with arsenobenzol a dozen monkeys with syphilis, whose initial chancre was cured in a longer or shorter time. The dose was 0.025 gm. per kilogram when given intramuscularly and 0.015 when given intravenously. (A proportionate dose for a man weighing 160 lb. would be 1.6 gm.) Three of these animals reinoculated with human material developed syphilis after a normal period of incubation. These three animals Neisser considered as having been cured. Three other animals injected and then reinoculated under the same conditions as the preceding developed after the same delay not typical primary lesions, but suspicious infiltrated and desquamating lesions which were probably syphilitic, as two controls developed undeniable syphilis.

Neisser also inoculated several monkeys twelve days after the injections and found the primary manifestations to be delayed ten to fifteen days longer than in the control animals.

Margulies found that the trypanosomes quickly became accustomed to "606" when the dose was augmented slowly and cautiously. They no longer disappeared even when the maximum dosis tolerata was reached; the parasites had become arsenic-resistant. With the spirilli this resistance to arsenic was attained only after a long series of passages; they survived double the dosis tolerata, although they apparently lost their initial virulence. The spirilli of recurrent fever showed no resistance to arsenic even after fifty-nine passages, as they disappeared when the dose was slightly increased. Such was also the case with the spirochete of syphilis. On the other hand, the rats were able, at the end of two or three weeks, to withstand double the fatal dose.

These therapeutic experiments are the more interesting for because of them one can explain the failures in "606" by an arsenic resistance.

In frambesia, Nichols, like Ossola and Truffi, practiced the scrotal inoculation of rabbits after the method used in syphilis. The scrotal lesion of frambesia differed from the lesion of syphilis only in degree. Contrary to the experience in monkeys, the scrotal inoculation of rabbits produced an energetic Wassermann reaction and innumerable spirochete were found. After verification of the lesion, the inoculated rabbits received 0.0045 gm. arsenobenzol either subcutaneously or intravenously, a dose twenty to twenty-five times smaller than the dosis tolerata. Within twenty-four hours the spirochete had disappeared and within two or three days the tumefaction was effaced.

### CHAPTER 2 — THE TECHNIC OF THE INJECTIONS.

In conformity with Alt's and Ehrlich's directions, most experimenters used a dose of 0.3 gm. To-day, it is the almost unanimous opinion that this quantity is insufficient and that to that fact can be attributed a large proportion of the relapses and failures observed. To-day the dose quite generally adopted is 0.5 gm., more or less. But much larger doses have been given without ill-effects. Fraenkel and Grouven have arrived by progression at doses of 0.9, 1 gm., and even 1.2 gm. In rebellious cases they have given 0.7 gm. fourteen days after an injection of 0.4 gm. and two weeks later, when the arsenic had apparently been completely eliminated, a dose of 0.8 to 1 gm. In this manner 47 men and 26 women received in two injections a total amount of "606" varying from 0.45 to 1.8 gm. and, in three injections, a total running from 1.6 up to 2.4 gm. Wechselmann also has given in three consecutive injections 0.25, 0.5, 0.5 gm. Although the second injection may be given in eight days, he considers it better to wait three or four weeks.

Ehrlich believes the question of dosage to be of the greatest importance and that it should be calculated afresh for each individual case. In subjects with disease of the nervous system whose hearts and nervous centers may react "in a disagreeable manner" he believes that the dose should not exceed 0.4. As, in such cases, the

number of spirochete is certainly minimal, small amounts of the medicament should suffice to accomplish their eventual destruction. But Ehrlich agrees with Neisser that this destruction should be attained in vigorous subjects by the first injection. The dose can be run up to 0.8 or even to 1 gm. without danger and may be increased by a method of combination such as Iverson uses.

Iverson, with the object of obtaining at the same time a rapid effect upon the spirochete and a continued action of the medicament, gives first an intravenous injection of 0.4 to 0.5 gm. and then at the end of forty-eight hours an intragluteal injection of 0.3 to 0.4 gm. This method by which the total dose can easily be augmented without violent reaction as high as 0.75 or 0.8 gm. was recommended by Ehrlich at the Königsberg Congress.

The two methods of injection, the intravenous and the intramuscular, have each their advantages without, however, either showing any particular superiority over the other.

With the exception of Fraenkel and Grouven's case (and this case has not yet been accepted by Ehrlich) the intravenous method does not appear to have produced any ill effects. Schreiber has given three hundred and twenty-five intravenous injections without accident. Although this method gives a little more rapid results, it is, nevertheless, more difficult of application. Since the first trials of the intramuscular injections, numerous modifications have been made in the method which have diminished its painfulness considerably. Many have used subcutaneous and intrascapular injections which are in no wise less painful but nevertheless allow the patient to continue at his work. At first it was universally believed that the patient should be kept in bed for several days, but little by little this belief has been modified.

Ehrlich stated in a recent circular (Oct. 25, 1910) that the subcutaneous injection of a neutral emulsion gives less permanent results than the other methods. The reason for this is the difficulty of obtaining an emulsion absolutely fine and regular, so that in consequence resorption is uneven, resulting in persistant infiltrations which tend to soften and necrose. The injection of a neutral emulsion came into favor because of the pain which follows the use of an acid or alkaline solution. Its temporary success is sufficiently explained by the resorption of small quantities of this very active preparation.

The painless and harmless intravenous injections seem to yield better results. Not only may the intravenous injection be repeated in two or three weeks, but, according to Ehrlich, it should be repeated if the curative effect of the previous dose has been insufficient. Indeed, injections have been repeated not only two and three times, but even four and five. While Alt and Schreiber have never exceeded 0.4 to 0.5 gm., Weintraub in some cases has reached doses of 0.7 to 0.8 gm.

Nothing has been published which shows that the mercurial treatment is contra-indicated by use of "606." Neisser, indeed, recommends it in particularly severe cases. In some cases, resistant to arsenobenzol, the mercurial treatment has been substituted or renewed without any inconveniences. Volk systematically employs a mixed method. It is to be noted, however, that Greven states that the mercurial treatment retards the elimination of the arsenic, while the iodide of potassium hastens it.

*Technic of Injections.*

We have seen that arsenobenzol may be used in three forms, in either acid or alkaline solution or in a neutral emulsion. The injection of the acid solution has been abandoned because, according to Alt, it is not devoid of toxicity, because even in small doses it has an unfavorable influence upon the heart, and because unless completely alkalinized the small elimination shows that but little of the substance gets into the circulation. Alt, therefore, has modified his technic as follows: 10 ccm. of sterilized water and the medicament are introduced into a glass cylinder of 100 ccm. capacity together with thirty glass pearls. [Schamberg makes the valid objection to the use of glass pearls that pieces of glass are liable to be chipped off.] When shaken energetically the substance is rapidly dissolved. Then there is added to each 0.10 of the substance, 0.5 of normal soda solution. When shaken for a half minute the solution becomes perfectly clear and if dissolution is not perfect it is because there is a slight excess or else a lack of soda. The total quantity may then be increased to 20 or 30 ccm. without injuring its clearness. A greater quantity renders the sensation of tension more painful, although less lasting.

Herxheimer shakes and grinds 1.5 gm. of arsenobenzol in 1 ccm. of a 5% soda solution. To the yellow mass resulting he adds, carefully, enough distilled water to obtain a fine suspension. The mixture is tested with tourmesol paper and neutralized with 2% acetic acid. The quantity is then increased to 10 ccm. with distilled water.

Schreiber, who employs the intravenous method, uses a glass cylinder of 250 ccm. capacity, which contains 10 to 20 ccm. of sterilized water. He adds 0.3 of the substance for women and 0.4 for men. When once dissolved, enough sterilized water or physiologic serum is added to bring the total amount up to 100 ccm. He then adds 0.7 ccm. of soda lye for each 0.1 gm. of the medicament. A precipitate forms which redissolves upon shaking, or if not, the addition of a few drops of soda will bring about the solution. The quantity is now increased to 200 ccm. by the addition of warm distilled water.

Wechselmann and Lange at first used Ehrlich's technic of a methyl alcohol solution of "606." This, however, they soon abandoned because of its painfulness and liability to produce untoward effects. The fear of toxic effects likewise caused them to give up the use of phenolphtalein. Lange then modified the technic, dissolving the "606" in a mortar with 1 or 2 ccm. of commercial soda

solution. Acetic acid was added drop by drop until a fine yellow deposit was produced. The precipitate was then recovered and mixed with 1 or 2 ccm. of distilled water. The whole was then neutralized as exactly as possible with 10% soda, or 1% acetic acid.

Bayet also uses this same technic.

Michaelis endeavored to get rid of the pain caused by injection of strongly alkaline solutions by using a neutral solution, but as the arsenobenzol is dissolved with difficulty under these conditions, one had to inject a medicament of which the greater part remained in suspension. While the simple neutralization of the aqueous solution by means of soda lye gives an irregular and clumpy precipitate, the neutralization by an acid of the solution obtained from an excess of soda yields, on the contrary, a liquid quite suitable for injection, having in suspension fine and regular elements. The clinical results being equally good, Michaelis developed the following technic: In a 50 ccm. cylinder there are placed from 0.3 to 0.6 gm. arsenobenzol and 16 ccm. of very warm sterilized water. The substance is stirred and broken up by means of a glass rod. When solution is obtained, from 3 to 5 ccm. of soda lye is added. It is then shaken and three drops of phenolphtalein in one half of 1% alcoholic solution is added. The mixture is then completely decolorized by acetic acid. The result is a fine suspension of a yellow color. Several drops of soda are then added until the red of the phenolphtalein barely reappears.

From the description of these technics we may share Blascho's opinion that all of these methods demand too great exactitude and too much asepsis to be intrusted to a practitioner or a pharmacist, and that for the present their use should be limited to institutions. Blascho, however, has remarked that, in spite of the necessity proclaimed by Ehrlich of the extemporaneous preparation for injection, the solution can be left for several hours without harm. It may be that aseptic solutions can be preserved indefinitely in sterilized tubes and be delivered to the practitioner in this form.

Kromeyer has used the following technic in over a hundred injections. A certain quantity of arsenobenzol, 3 gm. for example, is broken up very fine in a sterilized mortar with a very small amount of liquid paraffine. The mixture is then turned into a glass-stoppered vial and the amount of paraffine is carried to 30 ccm. in such fashion that each cubic centimeter shall contain 0.10 gm. of the medicament. The mixture must be shaken to get rid of the deposit, and needles of quite large caliber must be used.

Theoretically it is an objection to the use of such an emulsion that its absorption is relatively slow as compared with the solution ordinarily used. As a matter of fact, however, Kromeyer's clinical results do not differ from the others. Moreover, assimilation must be rapid since after the injection of 0.4 they have recovered in the urine, twelve hours later, 1.12 mgm. of arsenic, and in the next twelve hours, 12.7 mgm.

Volk has used an emulsion made with olive oil. Taege uses the following method: He first assures himself that the powdered "606" is quite movable in its tube, which proves that no air has entered. This is turned into a small test tube into which he pours two drops of glycerine per decigram and then a small quantity of warm water which has been held in readiness. The necessary material in this method is, therefore, most simple.

The method of Citron and Mulzer is even simpler than Kromeyer's. The solution is prepared in a syringe of 15 ccm. capacity. The powdered arsenobenzol is poured in and moistened with several drops of alcohol. Then distilled water is added up to the mark 5. The piston of the syringe is replaced and the syringe shaken. A clear golden-yellow solution is obtained. The piston is now once more removed. Forty drops of carbonate of calcium at ten to a hundred in suspension in artificial serum is added slowly while shaking constantly. The carbonate is designed to precipitate the base. The emulsion is then ready for immediate use. This method has numerous technical advantages and its clinical results are equal to those of the other methods. Its advantages are a unique recipient, easier asepsis, a perfectly neutral solution without the necessity of minute reactions, an injection nearly painless and the amount of vehicle reduced to a minimum (5 ccm. to 6½ ccm.).

(*To be continued.*)

## Book Review.

*Case Histories in Pediatrics.* A Collection of Histories of Actual Patients Selected to Illustrate the Diagnosis, Prognosis and Treatment of the Most Important Diseases of Infancy and Childhood. By John Lovett Morse, A.M., M.D. Boston: W. M. Leonard. 1911.

The purpose of this volume is stated in the descriptive sub-title, but a brief review is inadequate to detail its merits; it attracts as well as deserves study. The value and advantages of the case method of teaching in medicine have for several years been established. This book demonstrates that the method is not restricted to the class-room. The hundred judiciously selected cases which compose it form an epitome of pediatrics, and the discussion of each under diagnosis, prognosis and treatment is a refreshing and vital substitute for the theoretic chapters of the conventional textbook. To the reader, whether student or graduate physician, these cases not only serve as concrete examples of clinical types of disease, but afford invaluable and unconscious training in the best methods and habits of dealing with clinical facts as they present themselves in actual practice. From every point of view the volume should be of abundant service to members of the profession, and not least because it represents the author's ripened experience as a teacher and as a practitioner.

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## INSPECTION OF TENEMENT HOUSE WORKROOMS.

A LAW of the Commonwealth of Massachusetts provides that "a family which desires to make, alter, repair or finish coats, vests, trousers or wearing apparel of any description in a room or apartment in a tenement or dwelling house shall first procure a license therefor from a state inspector of health, which shall be approved by the State Board of Health." A printed circular issued by the State Board of Health is left with every householder of a license. The circular reads as follows:

1. The apartments, stairs and hallways must be kept in a cleanly condition at all times.

2. The rooms must be well aired. The windows of the living rooms as well as of the sleeping rooms should be partly open at all times.

3. The sewing should be done in the room designated by the State Inspector of Health, and in no other room.

4. During the process of finishing, the garments should not be placed in any room that is used as a sleeping apartment.

5. Immediate notice should be sent to the State Inspector of Health in case of occurrence of a communicable disease in the family of the person holding the license, or in any family in the same building. Any case of skin disease in the family of the person holding the license should also be reported to the State Inspector of Health.

6. In case of removal, immediate notice must be sent to the State Inspector of Health.

7. The work on wearing apparel must be done on the premises designated on the license, and only by the members of the family of the person holding such license.

8. The number of occupants of the apartment should not exceed the number specified by the State Inspector of Health.

9. The license may be revoked on violation of any of the above regulations.

By close co-operation with the local health authorities the occurrence of every case of communicable disease known to the health officials is discovered; the premises are visited at once and if necessary the license is revoked.

There are, in Suffolk County, about 1,600 licensed tenement workrooms. Since Dr. Linenthal's appointment as State Inspector of Health he has inspected some 7,000 homes and issued about 4,000 licenses. Over 200 cases of communicable disease have been investigated and the necessary steps taken to guard the public health. While some workrooms are in homes where the sanitary conditions are beyond reproach, many are located in the congested tenement district and require constant inspection.

In the congested district a comparison of the licensed flats with those that prevail in other flats of the same building discloses a very striking difference in the sanitary conditions in these two classes of homes.

Briefly stated, the methods of inspection and licensing of tenement house workrooms, under the supervision of the State Board of Health, within the meaning of the law have resulted in (*a*) the maintenance of higher sanitary standards in such rooms; (*b*) a greater protection to those persons who are licensed to work on articles of wearing apparel, and to the public, from communicable diseases; and (*c*) the development of higher standards of hygienic living for persons in other flats and buildings where no licenses are required. Thus it is clear that the problem of inspecting tenement house workrooms is preeminently and exclusively one of public health.

## CLAUDE MARTIN AND AUTOLITHOTRITY.

AN item in the February number of the *Indian Medical Gazette* quotes from the *Asiatic Journal* for 1816 two interesting accounts of the manner in which the celebrated Franco-Indian surgeon, Claude Martin, operated upon himself for stone in the bladder. During his later years, Martin suffered severely from vesical calculus, and, being unwilling to undergo lithotomy, devised an instrument by means of which he performed lithotrity on himself. This instrument, according to Dr. Scott's account in the *Asiatic Journal*, consisted of a file, made from a properly tempered knitting-needle, fixed to the end of a piece of whalebone. This Martin passed into his bladder through a canula till it touched the stone, and then moved the file backwards and forwards till the stone was reduced to powder, which was

subsequently passed with the urine. The calculus recurred, and Martin is said to have repeated the procedure many times. "So accurately from habit could the Colonel [Martin] judge of every circumstance, that he could tell when any part of the surface of the stone became more elevated than the rest, and could remove that part with the greatest nicety."

The second account of this surgical episode, published in the *Asiatic Journal*, describes in addition the repeated recurrence of the calculus, from which Martin died in 1800. Apparently Dr. Martin must have been a man not only of great mechanical ingenuity, but of remarkable fortitude and perseverance as well, who interpreted and applied literally the scriptural injunction, "Physician, heal thyself." His experience illustrates further the nicety of manipulative technic that may be acquired by practice even in difficult maneuvres with crude instruments and under painful circumstances.

## THE DIP-TANK DECISION.

A YEAR ago this spring, the Boston Board of Health issued an ordinance forbidding the sale of so-called "loose milk" from dip-tanks, and requiring that all milk offered for sale in this city must be in separate receptacles properly sealed. This regulation, intended to safeguard the purity of milk supplied to consumers purchasing in small quantities, went into effect on May 1, 1910. It was bitterly opposed by milk dealers on the ground that it greatly increased the expenses of their business and diminished the amount of their sales. Under its provisions, a certain dealer was fined $10 before the Municipal Court for non-compliance with its requirements. From this fine he appealed, and the case went before the Supreme Court. On April 4 of last week, the Court handed down its decision that in making this regulation the Board of Health exceeded its statutory authority and that the ordinance and all prosecutions under it are, therefore, void. In rendering this decision, the chief justice says in part as follows:

"We do not consider the question whether this regulation goes beyond the constitutional power of the Legislature to enact as a statute, or to authorize the Board of Health to establish locally, for we are of opinion that the statute under which the board assumed to act is not broad enough to give them this authority.

"The statute in question does not give the Board of Health power to make regulations as to all matters affecting public health. If the Board should be certain that the smoking of cigarettes by boys affects their health injuriously it would have no power to make a regulation forbidding the smoking of them by boys under a certain age or the sale of them to such boys. It has no power to make general regulations as to conduct or practices injurious to health which, if indulged in by persons, affect the health of the public. The statute gives the Board jurisdiction to deal with 'nuisances, sources of filth and causes of sickness within its town.'

"Plainly the milk in question was not a nuisance or a source of filth. We are of opinion that, within the meaning of the language of the statute, milk kept in a vessel, as this was kept by the defendant, was not a 'nuisance, source of filth or cause of sickness,' which gave the Board of Health jurisdiction to take any action or make any regulation under the revised laws.

"The regulation in the present case has no reference to property in connection with its removal from one city or town to another. Nor is pure milk such an article as is referred to in the statute. We are of opinion that this part of the section does not authorize a regulation as to the sale of milk kept and sold in the manner that is disclosed in this case."

This decision seems of considerable importance, not merely as affecting the case in question, but as a precedent in defining the limits of authority of boards of health. It is of course a matter of law about which there is no further discussion. The decision expressly does not consider the constitutionality of regulating the milk traffic by legislative enactment. So far as the dip-tank is concerned, if it be determined a menace to public health, its use can still be forbidden by statute. It may well be that this decision will serve to bring to a focus legislative action on the whole subject of regulation and control of the milk supply, not in Boston alone, but throughout the Commonwealth of Massachusetts.

## WORK OF THE PHILIPPINE HEALTH BUREAU.

THE eleventh annual report of the Bureau of Health for the Philippine Islands, recently published under date of Aug. 10, 1910, covers the period from July 1, 1909, to June 30, 1910. A preliminary general report by Dr. Victor G. Heiser, director of health, calls particular attention to the completion during that year of the Philippine General Hospital at Manila and of a hospital at Culion; to the beginning of work on the Southern Islands Hospital at Cebu, on hospitals at Bontoc and San Lazaro, on a sanatorium at Sibul Springs and on a tuberculosis camp near Manila; and to the obtainment of funds for the

erection of hospitals at Tuguegarao, Butuan, and other cities in the archipelago. A training school for male nurses has been established at Manila, and the school for female nurses has been enlarged and its work extended. A manual of simple remedies has been issued in five languages for popular distribution. It is announced that beriberi has been eradicated from Culion, and that all known cases of leprosy in the islands have been segregated except in the province of Moro.

The remainder of the report deals with details of these and other aspects of the work of the Bureau. An appendix contains numerous tabulated statistics. The volume concludes with a series of seventeen attractive full-page engravings illustrating sanitary improvements made in various parts of the Philippines, and the work of the several hospitals and colonies.

The entire report is of great interest, not only for the story which it tells, but as an example of the promptness, zeal and efficiency with which occidental methods and institutions have been introduced and established in oriental communities which fifteen years ago were relatively uncivilized or even barbaric.

## EFFICIENCY OF WORK ON MONDAY.

IT is probably a common human experience that it is harder to go to work Monday morning than on any other day in the week. A French physician has recently explained this phenomenon as due to psychomotor inertia following the rest of Sunday. He finds that the efficiency curve of work rises sharply to a maximum on Tuesday, then gradually declines through the remainder of the week to a minimum on Monday. Whether or no this physiologic explanation be sound, it is at least more creditable to mankind than the customary one of innate laziness. So many varying factors enter into the efficiency of a given day's work by any given person that the accurate determination of a constant value should seem to be matter of the greatest difficulty. It may wickedly be suggested that perhaps physicians are the gainers by their frequent custom of resting no more on Sunday than on other days of the week.

## MEDICAL NOTES.

NEW YORK POST-GRADUATE PLANT. — The New York Post-Graduate has plans and descriptions of its new school and hospital at the International Hygiene Exhibit at Dresden, Germany.

A GERMAN DISTINCTION FOR DR. WELCH. — Report from Berlin states that the German Emperor has recently conferred upon Dr. William Henry Welch, professor of pathology at Johns Hopkins University, in Baltimore, the crown order of the second class. This decoration is considered in Germany a high mark of distinction.

TYPHOID AT OTTAWA. — It is reported that typhoid fever has been epidemic for some time at Ottawa, Canada. Since the first of January, there are said to have been over 900 cases of the disease there, with 51 deaths.

HEALTH OF TROOPS IN TEXAS. — Report from Washington, D. C., on April 5, states that health conditions are excellent among the United States troops now in camp along the Mexican frontier near San Antonio, Texas. The percentage of sickness in the entire force at present in the field is less than five tenths. Thus far there has not been a single case of typhoid fever among the troops.

STEAMSHIP "VERONA" QUARANTINED AT PHILADELPHIA. — Report from Philadelphia on April 4 states that the Italian steamship *Verona*, which reached that city on April 2 from Genoa and Naples with over eight hundred passengers, was held there in quarantine on account of two suspected cases of smallpox among immigrants on board.

HEALTH RECORD OF A PENNSYLVANIA FAMILY. — The Philadelphia *Record* reports a remarkable instance of family immunity from death in the case of Mr. and Mrs. Philip Biermann, of Shenandoah, Pa., who will shortly celebrate their golden wedding. Eleven children, seven boys and four girls, have been born to them, all of whom are living. There has not been a death in the immediate family in forty-eight years. There are now thirteen grandchildren. Mr. Biermann is seventy-three years old and his wife sixty-nine.

SHIP'S PHYSICIAN STABBED BY A PATIENT. — Report from London states that Dr. Vogelherr, ship's physician on board the liner *George Washington*, which reached the port of Plymouth, England, on April 6 from New York, received during the voyage a serious stab-wound of the lung from an insane second-class passenger whom he was attending. The doctor is said to be doing well. His injury illustrates one of the incidental risks of the profession.

FIRE IN PHILADELPHIA HOSPITAL. — It is reported from Philadelphia that on the night of

April 6, the laundry building of the Philadelphia Hospital was almost completely destroyed by fire. In the fear that the flames might spread to the adjacent ward for incurable tuberculosis, two hundred patients were temporarily removed thence in cots, but returned after the fire was under control. The money loss is estimated at $100,000.

Publication of Local Health Ordinances. — The weekly health report for March 24 of the United States Public Health and Marine-Hospital Service contains a letter from Surgeon-General Wyman which, on March 4, was sent to the health officer of each city in the United States having a population of over twenty-five thousand. This letter requests every such officer to forward to the Bureau "copies of any ordinances or regulations relating to public health administration" enacted or promulgated in his municipality since Jan. 1, 1910, and in future to forward copies of such ordinances and regulations as soon as passed. It is the intention of the Bureau to print these local rules and regulations in its public health reports, in order to make them easily accessible for study or imitation by health officials in other communities throughout the country.

## BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, April 4, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 45, scarlatina 42, typhoid fever 4, measles 169, smallpox 0, tuberculosis 57.

The death-rate of the reported deaths for the week ending April 4, 1911, was 19.15.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, April 8, 1911, was 290, against 274 the corresponding week of last year, showing an increase of 16 deaths, and making the death-rate for the week, 21.95. Of this number 148 were males and 142 were females; 278 were white and 12 colored; 174 were born in the United States, 110 in foreign countries and 6 unknown; 64 were of American parentage, 177 of foreign parentage and 49 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 45 cases and 7 deaths; scarlatina, 50 cases and 2 deaths; typhoid fever, 6 cases and 2 deaths; measles, 134 cases and 1 death; tuberculosis, 90 cases and 36 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 25, whooping cough 5, heart disease 33, bronchitis 7. There were 17 deaths from violent causes. The number of children who died under one year was 48; the number under five years, 64. The number of persons who died over sixty years of age was 96. The deaths in public institutions were 131.

A Centenarian. — Orson W. Hayward, who died at Waterbury, Conn., in April, was reputed to have been born on March 18, 1810, in Charlestown, Mass. He removed from Boston to Waterbury in 1849.

Fine for Selling Impure Butter. — In the District Court at Dedham, Mass., on April 3, a storekeeper of Readville, Mass., pleaded guilty to the charge of selling impure butter and was fined $25.

Appointment of Dr. Theobald Smith. — It is announced that Dr. Theobald Smith, professor of comparative pathology in Harvard University, has been appointed visiting professor at the University of Berlin for the second half of the academic year 1911–12.

Bequests in Medical Charity. — The will of the late Mrs. J. C. White, of Boston, which was filed on April 7, at the Suffolk Probate Court, contains bequests of $500 each to the Cullis Home for Consumptives and the Boston Floating Hospital, and one of $250 to St. Monica's Home, Roxbury.

Report of the Lawrence Hospital. — The recently published thirty-fifth annual report of the Lawrence (Mass.) General Hospital and Children's Home describes the work of these institutions for the year ending Sept. 30, 1910. During this time 1,156 patients were admitted to the hospital, an increase of 14 over the preceding year. Sixty-four cases were received in the Anti-Tuberculosis Day Camp. There are at present 34 pupils in the training school, from which 8 nurses were graduated in 1910.

Report of Boston Lying-In Hospital. — The seventy-eighth annual report of the Boston Lying-In Hospital, just published, presents the record of its work for the calendar year 1910. During this time 829 mothers and 828 infants were cared for in the house, and in the Out-Patient Department 2,007 mothers and 2,022 infants. Among the patients in the house, there were 24 cases of eclampsia and 17 of placenta previa. Cæsarean section was performed on 18 patients,

on one of them for the fifth time. There was one case of triplets during the year. The nurses' training-school has graduated 32 pupils in 1910.

EXAMINATION FOR REGISTRATION IN DENTISTRY. — At the latest examination held in Boston on March 1, 2 and 3, before the Massachusetts State Board of Registration in Dentistry, of seventy candidates, only fourteen passed. This is said to be the largest percentage of failures ever recorded. Many of the applicants were not graduates of any dental school.

APPOINTMENT OF DR. KELEHER. — It was announced last week that Dr. William Henry Keleher, of Woburn, Mass., has been appointed medical examiner of the district comprising Woburn, Winchester, Lexington and Burlington, Mass. Dr. Keleher, who received the degree of M.D. from the Harvard Medical School in 1892, is a Fellow of The Massachusetts Medical Society.

A YOUTHFUL BRIDE AND MULTIPARA. — Mrs. Louis C. Chevigney, who died last week in Brockton, Mass., at the age of sixty-four, is said to have been married when she was only twelve years old. At the age of twenty-five she had had eight children, when she was thirty-five her first grandchild was born, and before she was sixty her first great-grandchild. She is survived by five of her own children, two daughters and three sons, two of the latter being physicians.

SEIZURE OF IMPURE CONFECTIONERY IN PROVIDENCE. — In the issue of the JOURNAL for March 30, we noted the seizure at Providence, R. I., on March 23, of 1,000 lb. of jelly beans, alleged to contain talcum. On April 3, in the same city, was made a second seizure of 1,000 lb. of jelly beans and 800 lb. of cocoa almonds, also alleged to contain talcum, shipped to Providence from a manufacturing firm in Boston.

PROHIBITION OF PUBLIC DRINKING-CUPS IN RHODE ISLAND. — In last week's issue of the JOURNAL we noted the unanimous passage by the House of Representatives of the Rhode Island General Assembly of a bill prohibiting the use of common public drinking cups in that state. On April 5, this measure was unanimously passed by the Senate also. The execution of the new law is placed in the hands of the State Board of Health.

NEEDS OF THE PORTLAND CHILDREN'S HOSPITAL. — On April 4, it was announced by the trustees of the Portland (Me.) Children's Hospital that unless private subscriptions to the amount of $25,000 can be obtained before May 1, the hospital must be closed on that date. This situation is due to the fact that the governor of Maine has vetoed the bill passed by the State Legislature providing the usual annual appropriation, upon which the hospital is dependent for paying its current expenses. It is to be hoped that the present deficiency may be promptly met by generous charitable contributions, in order that such closure of the institution may be avoided.

## NEW YORK.

STATE DEPARTMENT OF AGRICULTURE. — Dr. John G. Wills, of Chateaugay, Franklin County, has been appointed by Commissioner Pearson chief veterinarian in the State Department of Agriculture, in succession to Dr. J. F. Devine.

APPOINTMENT OF PROF. ALEXANDER SMITH. — Prof. Alexander Smith, for twelve years past the head of the Chemical Department of the University of Chicago, has been appointed professor of chemistry in Columbia University, in succession to Dr. Charles F. Chandler, who is about to retire from that position after forty-seven years' service. Professor Smith, who was born in Edinburgh, was graduated from the University of Edinburgh and obtained the degree of Ph.D. at Munich. He is at present president of the American Chemical Society.

MENINGITIS AMONG GREEK IMMIGRANTS. — On April 2 two transatlantic steamships arrived at quarantine, on each of which two Greek steerage passengers had died from cerebrospinal meningitis during the voyage. Health Officer Doty has now received word, however, that the medical authorities at Piraeus have been instructed to hold for observation for ten days all emigrants for this country. He has been informed also that the meningitis epidemic in Greece is diminishing.

BEQUEST TO THE PRESBYTERIAN HOSPITAL. — Among other charitable bequests in the will of the late Mrs. Benjamin Welles, of New York, is one of ten thousand dollars to the Presbyterian Hospital, to establish a fund, the income of which, equally divided, is to be used "to brighten the lives of the nurses and patients."

LATEST FATALITY FROM WASHINGTON PLACE FIRE. — On April 7, in St. Vincent's Hospital, the one hundred and forty-fourth and probably last victim of the Washington Place fire died, a girl who jumped from the ninth floor of the burning building. At that date the relief fund for the

sufferers from the fire amounted to over $82,000, and it is expected that it will be still further increased by the proceeds from a number of benefit performances.

Prosecution of a Christian Science Healer. — At the instance of the County Medical Society, another Eddyite healer has been arrested on the charge of practicing medicine illegally, and held in $500 bail. The society thought it had a test case when, a few weeks ago, the healer, Cole, was held by Magistrate Freschi for trial in Special Sessions, a court which for many years has dealt with cases involving a construction of the medical statutes. Later, however, Cole's council, ex-District Attorney Jerome, succeeded in getting the case transferred to the Court of General Session, where there will have to be a trial by jury, with the delay incident to congested calendars. In both these instances the evidence was secured for the society by a woman detective who represented herself as a patient.

A Centenarian. — The death of another centenarian is reported from that temple of longevity, the Home of the Daughters of Jacob, on East Broadway. Mrs. Esther Davis, a Russian Jewess, died there on April 5, at the advanced age, according to her friends, of one hundred and seventeen years, a statement which probably cannot be received with implicit reliance. Although she did not come to this country until thirty-five years ago, she became a candy peddler in Hester Street, and she continued actively in this occupation until she was one hundred and twelve years old, if her reputed age is accepted.

## Current Literature.

### Medical Record.

April 1, 1911.

1. *Thomson, W. H. *Vagaries of the Pneumococcus.*
2. Hill, E. C. *The High Death-Rate from Diphtheria in the United States; The Probable Causes and Means of Reduction, with Report of Cases.*
3. Cornwell, H. C. de V. *What is Rheumatism?*
4. *Cornwall, E. E. *Arthritis Deformans and Its Relation to Intestinal Putrefaction.*
5. Darnall, W. E. *The Hospital and the Young Physician.*
6. Devinson, S. *Source of Error in the Diazo-Reaction.*
7. Griffith, F. *A Case of Blood Extravasation into the Sclera from Indirect Violence.*
8. Dawbarn, R. H. M. *Short Talks with My Students, and Others; Being Random Suggestions for the Younger Practitioners.*

1. Thomson writes an interesting paper on pneumococcus infections and closes with some remarks on the treatment of pneumonia. He considers it important to avoid bodily movement carefully. In no acute disease, he says, is removal to a hospital over the rough street pavements so often fatal. The best stimulant for heart failure in pneumonia is camphor given hypodermically in 7½-gr. doses dissolved in a syringeful of sterilised olive or almond oil and repeated in two hours if necessary. For the severe pleuritic pain at onset, a single hypodermic injection of morphia (gr. ¼–½) over the seat of the pain is of great service. The writer believes that the mortality from pneumonia can be reduced by the use of carbonate of creosote. The extreme susceptibility of the pneumococcus to the faintest trace of carbolic acid may allow of this preparation being regarded as a true blood germicide. He gives this drug in 15-gr. doses every two or three hours in a specially prepared emulsion.

4. Cornwall emphasizes a few important points in the treatment of arthritis deformans. In the first place, one should find out whether chronic putrefactive toxemia is an etiologic factor or not. If it is, the diet should consist of sour milk, cereals, fats, vegetables and fruits. Feeble patients should not be stuffed, especially with putrefiable proteids. On the other hand, it is important to "feed up" in cases with debility and malnutrition. Potassium iodide is of value in some cases, but the salicylates are worthless in all cases. [L. D. C.]

### New York Medical Journal.

April 1, 1911.

1. Brown, S. H. *Trachoma.*
2. Solomon, M. *A Hurried Bird's Eye View of the Problems of the Modern Care of the Insane.*
3. Buerger, L. *Concerning Certain Improvements in the Optical Construction of Cystoscopes.*
4. Bierhoff, F. *The Problem of Prostitution and Venereal Diseases in New York City.*
5. Sorbsi, A. L. *A New Method of Direct Transfusion of Blood.*
6. Harris, H. G. *An Unusual Case of Infantile Paralysis.*
7. Moskowitz, S. *Report of a Case of Diabetic Glaucoma and Operation.*
8. Henriquez, C. L. *The Treatment of Whooping Cough.*
9. Scott, J. C. *Infundibulin in Hemorrhage, Due to Uterine Carcinoma.*

### The Journal of the American Medical Association.

April 1, 1911.

1. *Hunner, G. L. *Chronic Urethritis and Chronic Ureteritis, Caused by Tonsillitis.*
2. Lorenz, W. F. *Two Cases of Huntington's Chorea, with Spinal Fluid Findings.*
3. *Glueck, B. *Traumatic Psychoses and Post-Traumatic Psychopathic States.*
4. *Lockwood, G. R. *Prognosis and End Results of Gastric Ulcer.*
5. Pusey, B. *Vernal Conjunctivitis and Eosinophile Cells.*
6. Greene, J. B. *New Tonsil Dissector.*
7. Babler, E. A. *Report of Thirteen Cases of Hemiplegia Following Head Injury.*
8. Walker, W. P. *Hyperplastic Tuberculosis of the Cecum and Colon. Report of a Case.*
9. Solomon, M. *An Obscure Case of Traumatic Subdural Hemorrhage, without Fracture.*
10. Dieffenbach, W. H. *Electric Treatment of Obstruction and Post-Operative Paralysis of the Bowel.*
11. Hewitt, W. R. *Bacillus Aerogenes Capsulatus Infections, with Report of Ten Cases.*
12. Crolin, B. B. *An Improved Apparatus for Estimating the Pressure in the Cerebrospinal System.*
13. Stimson, C. M., and Rugh, J. T. *Aneurysm of the External Plantar Artery.*

1. Hunner cites a series of cases in which, when all other sources of infection could be ruled out, the tonsils seemed to be the primary focus of a chronic urethritis or ureteritis; and which were cured after removal of the diseased tonsils. The series is a small one, but very suggestive.

3. Glueck concludes that there is no psychotic entity which can be diagnosed as a traumatic psychosis without a history of a definite relation of the mental disturbances to a preceding trauma of the head, and, contrary to Kreuser's views, even what he terms endogenous psychoses can be brought on by head injuries, as the author's para-

noid and hypomanic cases show. The prognosis is favorable in the cases which show acute mental disturbances, such as acute delirious or confusional states, while in the so-called endogenous psychoses the prognosis is extremely bad. The author's hypomanic patient is still insane, six years after the injury, and the paranoid patient has shown no improvement for seven years.

4. Lockwood asserts that the recent improvement in surgical statistics in gastric ulcer, whereby a 10% mortality is the rule, is not only due to improvement in surgical technic, but also to the increased wisdom of the physician in calling in surgical help earlier, and in better selected cases. He rates mortality in uncomplicated gastro-enterostomy by a skilled surgeon, 2 to 3%; by the average surgeon, 6 to 8%; and the general operative mortality, 10 to 15%. The end results of medical treatment vary much with different men, but a fair average seems to be about 70% of cures, 17% of relapses and about 50% permanently cured, as opposed to the 90% of clinically cured cases reported by most authors. There should be no such thing as exclusively medical treatment. The better results of the present day are due to closer harmony of opinion as to treatment between medical and surgical men. Acute uncomplicated ulcers are best treated medically. Relief is usually prompt and lasting. [E. H. R.]

BULLETIN OF THE JOHNS HOPKINS HOSPITAL.

MARCH, 1911.

1. *MALLORY, F. B. *Cirrhosis of the Liver. Five Different Types of Lesions from which it may Arise.*
2. *MCCRAE, T. *Typhoid Spine, with the Report of Two Additional Cases with Bony Changes in the Vertebræ.*
3. PARKER, H. P., AND HAZEN, H. H. *Erythema Multiforme Iridis during the Course of Typhoid Fever.*
4. *WOOLLEY, P. G. *Acute Tuberculous Endaortitis.*
5. GATCH, W. D. *Report of a Case of Extensive Tierach Skin Graft.*
6. *THAYER, W. S., AND MORRIS, R. S. *Two Cases of Congenital Hemolytic Jaundice with Splenomegaly. Observations on Hemolytic Jaundice.*

1. Mallory, in an article clearly and concisely presented, and illustrated with beautiful plates, describes five types of lesions which may terminate in cirrhosis of the liver. The first, toxic cirrhosis, is due to toxins present in the circulation. It is characterized by necrosis of the cells around the hepatic veins, so-called central necrosis. It is acute and is often a terminal infection. Severe degrees of this constitute the condition known as acute yellow atrophy. The second type he calls infectious cirrhosis and is due to the presence of bacteria in the lesions. Infection is usually through the bile ducts. It is a rare chronic condition. The lesion spreads from the portal vessels toward the hepatic veins. There is extensive inflammatory reaction and increase of fibrous tissue, with a great increase in the size of the liver. The third type is pigment cirrhosis, occurring in cases of hemochromatosis. It is due to mechanical causes. Endothelial leucocytes filled with pigment collect in and block up the lymphatic vessels and spaces. There is an increase in connective tissue and in the size of the liver. It is a very chronic condition. The fourth type is syphilitic cirrhosis. Immense numbers of the treponemata are present in the liver; there is a great increase in fibrous tissue and in the size of the liver. The fifth and last type is alcoholic cirrhosis. Here the cells first affected lie most commonly in the region of the portal vessels. There is hyaline degeneration of the liver cells, often fatty infiltration, and active regeneration of connective tissue.

2. McCrae reports two additional cases of typhoid spine. The findings of recent years have finally settled the much-disputed question of the nature of this condition and show that it is a true spondylitis. The various changes which suggest an actual organic involvement of the spine itself are (1) local swelling, which has been frequently noted; (2) actual changes in the normal curves of the spine; (3) evidence of involvement of nerve roots; (4) radiograms and (5) local suppuration. Treatment is chiefly prophylactic — to warn the convalescent patient against too severe strain on the spine. The immediate treatment is by a plaster jacket or other fixation apparatus.

4. Woolley reports the details of a rare case of acute tuberculous endaortitis with a summary of previously reported cases.

6. Thayer and Norris report in detail two cases of congenital hemolytic jaundice with splenomegaly, with further observations on the condition and a review of the work previously done on it, particularly on the peculiar conditions associated with it — fragility of the red corpuscles and the presence of the reticulated red blood corpuscle as shown by vital staining methods. They go over the symptomatology of this condition and compare it with acquired hemolytic jaundice. This latter presents itself in three forms: (1) those cases simulating cholelithiasis; (2) those simulating pernicious anemia with jaundice; and (3) those simulating a chronic infectious cholangitis. They consider the pathological anatomy and pathogenesis of this condition. As to when hemolysis takes place, evidence seems to favor the view that this occurs in the circulating blood; the cause of the jaundice itself seems to be in the blood rather than in the liver.

[J. B. H.]

JOURNAL OF INFECTIOUS DISEASES.

MARCH, 1911.

1. SWINGLE. *The Transmission of Trypanosoma Lewisi by Rat Fleas.*
2. *GRAHAM. *The Influence of Ether and Ether Anesthesia on Bacteriolysis, Agglutination and Phagocytosis.*
3. WHITE AND ZEUBLIN. *The Influence of Fresh and Autolyzed Organ Extracts on Experimental Tuberculosis.*
4. DAVIS. *The Immunological Reactions of Oidiomycosis in the Guinea Pig.*
5. JACKSON. *Classification of the B. Coli Group.*
6. *KENDALL AND EDWARDS. *A Method for Determining the Germicidal Value and Penetrating Power of Liquid Disinfectants.*

2. Ether produces no effect upon bacteriolysis or agglutination, but causes a marked depression in phagocytosis. This was demonstrated with many of the organisms. The anesthetic was given to patients, free from infection, who were undergoing simple operations. The depression is due apparently to the action of the ether directly on the leucocytes and serum, possibly from the fat-solvent action of the ether. The instability of this ether union is demonstrated by the removal of the inhibitory action where air is passed through the mixture. A similar counteraction is produced by injections of lecithin in vitro, and by rectal injections of olive oil in vitro and in vivo.

6. The authors have devised a simple and apparently trustworthy method of determining the penetrating properties of liquid disinfectants. The test material consists of agar cylinders of definite diameter, infected, while liquid, with B. coli. Measured sections of these cylinders are placed in the disinfectant. At stated intervals they are removed and the central core extracted. These are washed in sterile water and incubated in dextrose fermentation tubes. The formation of the gas indicates that the disinfectant of that strength has not penetrated to the center of the cylinder in that given time. The application of this method has proved satisfactory in the hands of the writers. [L. H. S.]

ANNALS OF SURGERY.

FEBRUARY, 1911.

1. ELSBERG, C. A. *Anesthesia by the Intratracheal Insufflation of Air and Ether.*
2. *ELIOT, E., AND CORSCADEN, J. A. *Intussusception, with Special Reference to Adults.*
3. WILSON, L. B. *Diverticula of the Lower Bowel; Their Development and Relationship to Carcinoma.*
4. MILLER, R. T., JR. *On the Coincidence of Volvulus and Real or Simulated Strangulated Hernia.*
5. *MARRO, A. *The Restoration of Fecal Continence after Iliac Colostomy.*

2. The authors have studied 300 cases of intussusception collected from the literature. Many phases of the subject are discussed and the article is concluded by case epitomies. There were 23 cases in which intussusception was associated with trauma, 60 cases with benign tumor, 40 with malignant tumor, 29 cases with Meckel's diverticu-

lum, 2 cases with foreign bodies, 19 cases with ulceration (typhoid, dysentery, tuberculous, simple inflammatory). Attention is directed to the varied symptomatology of intussusception in adults, and symptoms of several etiologic groups are considered in detail. Disappearance of the tumor as a result of rectal infections may mean but partial reduction, and after a brief respite acute symptoms may recur. The general condition of the patient is then less capable of overcoming the shock of inevitable operation. The results of various operative procedures are presented in a table. With both intussusceptum and intussuscipiens necrotic, resection is imperative, followed in adults by ether anastomosis or enterostomy. In infants the latter procedure should never be practiced With the intussuscipiens viable the intussusceptum may be resected by splitting the wall of the former. The results are good.

5. The principle of Marro's operation to restore fecal continence after iliac colostomy is in conducting the mobilized proximal end of the bowel upward through a subcutaneous tunnel parallel to the external border of the rectus muscle to an external position above the belt line. The bowel is carried horizontally from a median incision beneath the rectus to a point just external to it. This is accomplished by a short vertical incision whose upper end is not higher than a line joining the iliac crests. The bowel is then carried vertically upward through a subcutaneous tunnel and permitted to protrude at a point above the belt line. Fecal continence is thus doubly insured: first, by angulation of the bowel in the submuscular and subcutaneous tunnels and, secondly, by compression of the bowel in its subcutaneous tunnel by the waist band of the drawers or other belt. [T. W. H.]

### Surgery, Gynecology and Obstetrics.

### March, 1911.

1. *MacCarty, W. C., and McGrath, B. F. *Clinical and Pathological Significance of Obliteration, Carcinoma and Diverticulum of the Appendix. Deductions from an Examination of 5,000 Specimens with a Comparative Study of the Pathology and Clinical Histories in 2,000 Cases.*
2. Lane, W. A. *Distention Changes in the Duodenum in Chronic Intestinal Stasis.*
3. Mayo, C. H. *Intestinal Obstruction, Due to Kinks and Adhesions of the Terminal Ileum.*
4. *Ewing, T. *Teratoma Testis and Its Derivatives.*
5. *Seelig, M. G., and Gould, C. W. *Osmosis as an Important Factor in the Action of Antiseptics.*
6. *Schrager, V. L. *Hernial Tuberculosis.*
7. Huggins, R. R. *Suppuration in the Retroperitoneal Space.*
8. Davison, C. *The Surgical Treatment of Undescended Testicle.*
9. Hoover, A. R., and Marden, J. K. *Case of Complete Amenorrhea, with Heredity as a Probable Etiological Factor.*
10. Blair, V. P. *Operative Treatment of Difficult Cases of Palate Defect after Infancy.*
11. Cotton, F. J. *Vertebral Fracture; Insertion of a Wire "Back Stay."*
12. Hirst, B. C. *I. A New Bag for the Hydrostatic Dilatation of the Cervix Uteri in Pregnant and Parturient Women. II. A New Hook for Decapitation.*

1. MacCarty and McGrath point out that the average age at which complete obliteration of the appendix occurs is thirty-four and six-tenths years. The tip may be obliterated as early as five to ten years. In these series 90% of the carcinomata occurred in the tip of the appendix, and in partially or completely obliterated appendices. With this in mind, surgeons should always remove partially or completely obliterated appendices, instead of leaving them for nature to take care of the process, which probably is not a normal physiologic involution, as was formerly supposed. Obliteration seems to occur as the result of an inflammatory process, as shown by its histology, duration of the process and high frequency in appendicitis. Carcinoma may occur at practically any age. Carcinoma of the cecum probably arises from the appendix only in a very small percentage of cases.

4. Ewing has been unable to find satisfactory evidence that any considerable portion of tumors of the testicle arise from the stroma or tubules of this organ, but evidence points to the conclusion that with relatively few exceptions tumors of the testicle belong in the embryonal class and that the great majority or possibly all of these embryonal tumors are of teratomatous origin. He concludes that teratoma testis arises from sex cells in the neighborhood of the rete whose normal development with spermatogonia has been suppressed, but whose potencies remain intact and ready to express themselves in the various forms of simple or complex teratomata.

5. Seelig and Gould have demonstrated experimentally that 90 and 95% alcohol have far greater penetrative power to kill bacteria than 70%, which has previously been advocated. Also that iodine is one of the most powerful antiseptics because of its power of penetration or osmosis. Likewise, alcoholic solutions of iodine are more efficient than Harrington's solution. The efficiency of any germicide depends, they think, on its power of penetration more than on any other factor.

6. Schrager writes of hernial tuberculosis that the French deserve the credit for the most important literature on this subject. Hernial tuberculosis is most common in children. The male is three times as often affected as the female, for the sole reason that hernia is more frequent in the former. The cause of hernial tuberculosis is largely, though not entirely, that of peritoneal and intestinal tuberculosis. The general opinion is that in 70% of the cases it is merely the expression of a peritoneal tuberculosis and in the remainder of the cases it is associated with tuberculosis of other organs, particularly the genitalia. As a rule both sac and contents are tuberculous. The four symptoms on which a diagnosis can often be made are pain, physical changes in the hernia, irreducibility and fluid in the sac. In one series of 115 cases primary union occurred in 98 cases. In 8 cases fistulæ formed which were obstinate to treatment. [E. H. R.]

### The Practitioner.

### March, 1911.

1. *Gould, A. P. *Cancer and the General Practitioner.*
2. *Bashford, E. F. *The Obligation imposed upon the General Practitioner by the Development of the Experimental Investigation of Cancer.*
3. Rigby, H. M. *Some Points in the Diagnosis and Treatment of Cancer of the Breast. Seventy-eight Cases Treated by Operation.*
4. Dixon, W. E. *Some Considerations on the Absorption and Excretion of Drugs.*
5. Stark, A. C. *Some Clinical Uses of Sodium Salicylate.*
6. Hawthorne, C. O. *Some Cases of Infective Endocarditis.*
7. Chapman, C. W. *On the Insidious Development of Aortic Valvular Disease in Cases of Atheroma.*
8. Savill, A. F. *Vaccine Treatment of Seborrhea of the Scalp.*
9. *Henry, S. A. *On Vaccine Treatment of a Case of Malignant Endocarditis (or Pneumococcic Septicemia).*
10. Liddell, J. *The Nervous Phenomena Occurring in Chronic Mucous Colitis.*
11. Styles, R. C. *Spengler's Differential Staining Methods for Tubercle Bacilli.*
12. *Abrahams, A. *Athletics and the Medical Man.*
13. Wynne, J. D. *Dr. Johnson and the Medical Profession.*

1. Gould urges that all practitioners send to the operating surgeon the histories of their cancer cases after operation.

2. Bashford describes the extent, scope and aims of the various investigations now being made into the nature of cancer. He urges, however, that, until a specific cure is discovered, that every practitioner urge the earliest possible removal of all lesions that have the remotest chance of being cancerous.

9. Henry describes in great detail an interesting case of malignant endocarditis in which the pneumococcus was the infecting organism and which was remarkably benefited and practically cured by injections of a polyvalent pneumococcic vaccine.

12. Abrahams gives an interesting paper on the so-called dangers of athletic exercises. These dangers he discusses, and demonstrates the fallacy of most of them. The man to whom athletics is most dangerous is the experienced athlete who goes into a race without proper training; the amateur and the school boy are rarely able seriously to harm themselves through inability to use up all their strength and energy in one effort. In certain instances, as in an eight-oared crew, this is different; here the weakest member must keep pace with the strongest. For this reason he unreservedly condemns school-boy rowing. He discusses in turn the possible ill-effects which may result to the heart, kidneys, muscles, joints, stomach. His views on training are refreshingly sane. [J. B. H.]

THE INDIAN MEDICAL GAZETTE.

JANUARY, 1911.

1. CRAWFORD, D. G. *The Uncovenanted and Subordinate Medical Services.*
2. *HEHIR, P. *Historical Note on Cholera in India.*
3. ANDERSON, S. *Arrows and Arrow-Wounds in Manbhum.*
4. SEN, H. *The Health of a Bengal District.*
5. STEWART, A. D. *Two Cases of Ascariasis.*
6. *HEFFERNAN, P. *A Case of General Paralysis of the Insane in a Native of India.*
7. MUIR, E. *The Ipecacuanha Treatment in Liver Abscess.*
8. STEPHEN, L. P. *A Case of Traumatic Rupture of the Prostatic Urethra.*

2. Hehir quotes an interesting letter of Robert de Mobilibus, written from Madura on April 22, 1609, describing under the name of *Mordechien* a virulent disease then epidemic in that kingdom and apparently identical with Asiatic cholera. It is known that the Portuguese of Goa called cholera by the name *Mordechien* as early as 1563. The author further quotes a letter of Father Martin, a Jesuit missionary in Madura, describing another epidemic of *Mordechien* in 1700, and the quaint methods attempted for its cure.

6. Heffernan reports with interest a case of general paralysis in a native Indian, as a rare exception to the usual immunity of such natives to this parasyphilitic process. [R. M. G.]

FEBRUARY, 1911.

1. WALI, F. *Sandfly Fever in Chitral.*
2. FOULKES, T. H. *A Speculation on Diabetes Mellitus. (Preliminary note.)*
3. *ROGERS, L. *Gleanings from the Calcutta Post-Mortem Records. IV. Cirrhosis of the Liver.*
4. SUHRAWARDY, H. *Pancreatic Cysts.*
5. MUIR, E. *Treatment of Kala-Azar by the Hypodermic Injection of a Solution of Quinine Sulphate.*
6. ROBERTS, J. R. *A Method of Performing Gastro-Jejunostomy and Intestinal Anastomosis by a Single Row of Sutures.*

3. From a careful comparative pathologic study of 333 cases of cirrhosis of the liver observed at autopsy in the Calcutta Medical College between 1873 and 1909, Rogers derives the following conclusions:

(1) Cirrhosis of the liver is several times as frequent in Calcutta among natives of India as it is in a temperate climate, but is not especially common among European residents.

(2) Although Mohammedans are forbidden the use of alcohol by their religion, cirrhosis is only slightly less frequent among them proportionately than among Hindus, who drink wine.

(3) One fifth of the cases of cirrhosis in Calcutta are secondary to kala-azar.

(4) There is no evidence that malaria ever produces cirrhosis of the liver in Calcutta.

(5) Hanot's hypertrophic cirrhosis is rare in Calcutta.

(6) In Calcutta cirrhosis of the liver is so frequently associated with chronic dysentery, usually of the amebic type, as to suggest that the fibrosis of the liver is secondary to the bowel ulceration.

(7) Chronic inflammatory change, due to bacterial infection or toxic absorption through ulcers of the gastro-intestinal tract, is also a likely cause of cirrhosis of the liver.

(8) Leucocytosis is common in the ordinary type of cirrhosis of the liver, a high degree being of very bad prognostic significance. On the other hand, leucopenia points to a cirrhosis secondary to kala-azar. [R. M. G.]

MARCH, 1911.

1. CALVERT, J. T. *Cirrhosis of the Liver.*
2. BARKER, F. A. *Exploratory Laparotomy in Affections of the Gall Bladder and Bile-Ducts.*
3. HEHIR, P. *Ulcerated and Swollen Gums in the Native Army.*
4. GREEN-ARMYTAGE, V. B. *An Aid to the Diagnosis of Poisonous Snakes.*
5. *BIRDWOOD, G. T. *Modern Midwifery Practice in India.*
6. GLEESON, F. H. *Wounds Inflicted by Tigers, Panthers and Bears.*
7. ELLIOT, R. H. *Native Gunpowder Injuries of the Eye.*

5. One is prone to think of India as a country in which obstetrics, among the natives at least, takes care of itself. Apparently, however, this is not now the case. Birdwood describes interestingly the present status of knowledge and practice among Indian physicians and midwives, and makes recommendations for extension among them of instruction in asepsis, diagnosis, and the treatment of contracted pelves. [R. M. G.]

BERLINER KINISCHE WOCHENSCHRIFT. No. 10.

MARCH 6, 1911.

1. MELTZER, S. J. *Accelerated Absorption through the Lumbar Muscles and the Employment of these Muscles for the Injection of Salvarsan.*
2. TRAUBE, J. *The Action of Poisons and Drugs.*
3. WALTERHÖFER, G. *The Influence of Santonins on the Excretion of Sugar in Diabetes Mellitus.*
4. GOLDFLAM, S. *The Question of Iodine in Basedow's Disease.*
5. WALLENTEIN, P. S. *The Diagnostic Value of the Von Pirquet Reaction and the Treatment of Tuberculosis with Cutaneous Inoculations of Tuberculin.*
6. *POLLNOW AND LEVY-DORN. *Congenital Adhesions of Radius and Ulna (Synostosis Radio-Ulnaris).*
7. *FRANK, A. *Repeated Extra-Uterine Pregnancy in the Same Woman.*
8. MÜNZER, A. *The Cerebral Localization of the Sexual Impulse.*
9. FLEBBE. *Multiplex, A New Extension Apparatus.*
10. FALKENSTEIN. *Serological Observations in Regard to Gout.* (Conclusion.)
11. MEYER, F. *The Necessity for Private Hospitals for Infectious Diseases.*

6. The authors report a care of a man forty-two years old who has always been afflicted with this curious anatomical defect in both his forearms. His father suffered from a similar trouble with his right arm only. The article is illustrated with x-ray plates.

7. The author reports three cases where patients have been twice sucessfully operated upon for ectopic pregnancy. In conclusion he mentions the probable underlying causes of tubal gestation. [J. L. H.]

WIENER KLINISCHE WOCHENSCHRIFT. No. 1.

JAN. 5, 1911.

1. PFEIFFER, H. *The Knowledge of the Photodynamic Actions of Fluorescent Substances.*
2. SORGO, J., AND SUESS, E. *Experiences in Tuberculin Treatment.*
3. LAUB, M. *Tuberculin Diagnosis and Ambulatory Tuberculin Treatment.*
4. *PIESEN, L. *The Significance in School Hygiene of Lordotic Albuminuria.*
5. NOBL, G. *The Knowledge of Generalized Herpes Zoster.*
6. GIOSEFFI, M. *The Employment of the Blood Platelet Method and of the Complement-Binding Reaction in the Diagnosis of Sporadic Cases of Cholera.*
7. STERNBERG, W. *Diet and Cooking in Chemistry, Physics and Physiology.*
8. RIEHL, G. *Observations on the Ehrlich Debate.*

9. Teleky, L. *A Journey to a Congress of Social Medicine.* (To be concluded.)

4. Piesen believes that lordotic albuminuria is dependent on renal mobility, and that constrained sitting postures in school are predisposing causes. [R. M. G.]

Deutsches Archiv für Klinische Medizin. Bd. 101. Hept. 5–6. Feb. 6, 1911.

1. *Müller, L. R. *Contributions to the Anatomy, Histology and Physiology of the Vagus Nerve; at the Same Time, a Contribution to the Neurology of the Heart, the Bronchi and the Stomach.*
2. *Scheidemandel, E. *Experiences on the Specificity of the Wassermann Reaction, and on the Value and Origin of Incomplete Fixations.*
3. Erner, A. *Radical Treatment for Appendicitis and its Results in 611 Cases at the Königsberg Surgical Clinic.*
4. Schippers, J. C. *The Antitryptic Action of Pathologic Urines.*
5. Grifel, P. *Two Cases of Aortic Aneurysm Perforating into the Pulmonary Artery.*
6. Hochhaus, H. *Pectoral Fremitus.*
7. Pryn, O. *New Investigations on the Value of the Sahli Seiler Test Meal.*
8. Stursberg, H. *Investigations on the Kind and Cause of Reflex Vascular Disturbances in Syringomyelia.*

1. Müller's article on the vagus nerve is a complete one from the point of view of anatomy and physiology. It is impractical to review such an article, but it is worth while to have it as reference for any one who is interested in looking up any questions on the vagus nerve.

2. Scheidemandel has performed 1,212 Wassermann tests during the past two and one-fourth years. His technic has been that originally pursued by Wassermann, in whose laboratory he learned it. He finds it convenient to group the results under four heads. Complete checking of hemolysis and almost complete checking he calls strongly positive. Incomplete checking he calls weakly positive, and he calls doubtful the cases in which there is moderate hemolysis. If one considers only the strongly positive cases as diagnostic, the test is specific in 99% of the cases. In the doubtful positive cases and weakly positive cases the test is not nearly as specific. He warns against using one negative test for diagnostic purposes. Bile-stained serum is unsatisfactory. He found that the kind of complement was next in importance to the kind of antigen used. He urges that all laboratories use the original Wassermann method and the same antigen. [C. F., Jr.]

## Miscellany.

### HEALTH INSPECTION IN FACTORIES.

At a meeting of the Association of the State Inspectors of Health, the members of the association passed the following resolve:

*Whereas*, The Association of the State Inspectors of Health of Massachusetts, after carefully considering the report of the Massachusetts State Commission appointed last year to investigate the general subject of industrial inspection, find that (1) the commission's presentation of the subject of health inspection in factories as carried on by the State Inspectors of Health under the State Board of Health is incomplete, (2) contains inaccuracies and on the whole shows (3) a superficial familiarity on the part of the commission with the work of the State Inspectors of Health. Therefore be it

*Resolved*, That the members of the association deeply regret this lack of knowledge on the part of the commission, and the absence from the report of any statement showing the actual work done by the State Inspectors of Health, and the great number of changes that have been made to improve the sanitation of factories and workshops as the result of written orders and recommendations.

*Resolved*, That the members of the association especially regret this omission not so much on account of the injustice done to the State Inspectors of Health, but on account of the reflection it casts on the state of Massachusetts and the erroneous impression of the work which will be conveyed wherever that report may circulate.

The Association of the
State Inspectors of Health.
By their committee,
(Signed) Harry Linenthal.
Adam S. MacKnight.
Elliott Washburn.
Lyman A. Jones.
Wm. W. Walcott.

## Correspondence.

### THE BEST ROUTE TO SEE THE WONDERS OF THE WESTERN SLOPE.

Boston, April 3, 1911.

*Mr. Editor:* As members of the American Medical Association are to have peculiar inducements offered them for visiting the Pacific coast this summer, may I be permitted to call attention in your columns to a route that will allow the most interesting places in the western part of our country to be seen under very favorable conditions.

The first point of interest will naturally be the Grand Canyon of Arizona, although a few may wish to stop over one train to see the petrified forests of Arizona near Holbrook. At least one day should be spent at the canyon. On reaching southern California, visits can be made to Redlands, Coronada Beach, etc., on the way to Los Angeles.

On leaving the latter city those desiring to visit the Yosemite Valley can go via Bakersfield and Fresno to Merced, where the branch line leaves for the valley. A pleasanter way, however, would be the coast line via Santa Barbara, Monterey, San José to Merced and thence into the Yosemite. This route is longer, but allows one one to see much that the other does not. The Yosemite and the Big Trees are among the wonders of this continent and are well worth seeing.

San Francisco comes next in order and is always interesting to an Eastern man. He will be sure of a hearty welcome and will see much to entertain him for some days. Leaving that city by the "Shasta Route," the next place of interest will be Portland, Ore. Next come Tacoma and then Seattle. From the latter place steamers can be taken for the Alaska trip.

The most interesting portion of the Canadian Rockies lies between Seattle and Banff, and by returning to Seattle from Banff an opportunity is given to see the Yellowstone Park, the third of the trio of wonders in the western country. Time from Seattle to Banff is about eighteen hours and the round trip is $30.

Leaving Seattle by the Northern Pacific Road gives one an opportunity to visit the Yellowstone Park, requiring about a week. From the Yellowstone one can return east via Ogden and Salt Lake City, or via St. Paul and the Great Lakes, or from St. Paul via Chicago.

The above route enables one to see the wonders of the western slope and as many of the lesser places of interest as he cares to take in. The trip is an ideal one for this country and will well repay those who take it or any portion of it.

Very truly yours,
GEORGE W. GAY, M.D.

## PROFESSOR IRVING FISHER'S REPORT ON NATIONAL VITALITY.

BUFFALO, N. Y., March 20, 1911.

*Mr. Editor:* In your editorial under the above heading in your issue of March 16, you say that "there seems a slight suggestion of personal animus" in my *examination* of Professor Fisher's *report*, which appeared in *Lancet Clinic* of Feb. 18. This is a mistake. Professor Fisher is, I know, an agreeable gentleman, and an extremely able mathematician, although I do not think that I have ever met him. His diatribes on dietetics and vital statistics, however, in my opinion, do a great deal of harm, because some persons imagine that he is a physiologist and take his ipse dixit seriously. One of his dogmatic assertions upon a very important question of physiological chemistry was submitted by me to two authorities of the first rank with the result that one of them denied its accuracy and the other said that he did not know what the learned professor meant! Professor Fisher's knowledge of vital statistics is well exemplified by his statement on page 2 of *National Vitality* that "the larger the city, the higher the death-rate." What better evidence could be furnished that the gentleman has not grasped the elements of mortality figures? I have no personal animus toward Professor Fisher, but I am opposed to his method of giving to the gullible public as facts assertions that any statistician could disprove. This he has done, as I have shown, not only in *National Vitality*, but also in *Costs of Tuberculosis*.

Very truly yours,
LAWRENCE IRWELL.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MARCH 25, 1911.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | 1,618 | 489 | Waltham | 11 | 3 |
| Chicago | 733 | 189 | Brookline | 12 | — |
| Philadelphia | — | — | Chicopee | 5 | 1 |
| St. Louis | — | — | Gloucester | 4 | — |
| Baltimore | — | — | Medford | 6 | — |
| Cleveland | — | — | North Adams | 10 | 7 |
| Buffalo | — | — | Northampton | 8 | 1 |
| Pittsburg | — | — | Beverly | 5 | 1 |
| Cincinnati | — | — | Revere | 3 | — |
| Milwaukee | — | — | Leominster | 4 | — |
| Washington | — | — | Attleboro | 8 | 2 |
| Providence | — | — | Westfield | 7 | — |
| Boston | 272 | 71 | Peabody | — | — |
| Worcester | 48 | 12 | Melrose | 1 | 0 |
| Fall River | 58 | — | Hyde Park | 2 | 0 |
| Lowell | 45 | 16 | Woburn | 2 | 0 |
| Cambridge | 37 | 11 | Newburyport | 6 | — |
| New Bedford | 32 | 9 | Gardner | 5 | 2 |
| Lynn | 30 | 8 | Marlboro | 5 | 2 |
| Springfield | 35 | 6 | Clinton | 3 | 1 |
| Lawrence | 21 | 8 | Milford | — | — |
| Somerville | 25 | 3 | Adams | 8 | 3 |
| Holyoke | 19 | 7 | Framingham | 5 | 1 |
| Brockton | 12 | 3 | Weymouth | — | — |
| Malden | 18 | 3 | Watertown | 6 | 1 |
| Haverhill | 6 | 1 | Southbridge | 3 | 1 |
| Salem | 13 | 2 | Plymouth | — | — |
| Newton | 7 | 1 | Webster | 4 | 1 |
| Fitchburg | 6 | 2 | Methuen | — | — |
| Taunton | 14 | 5 | Wakefield | 5 | — |
| Everett | 8 | 1 | Arlington | 3 | 1 |
| Quincy | — | — | Greenfield | — | — |
| Chelsea | 9 | 2 | Winthrop | 1 | — |
| Pittsfield | 8 | — | | | |

## TREASURY DEPARTMENT, BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

A BOARD of commissioned medical officers will be convened to meet at the Bureau of Public Health and Marine-Hospital Service, 3 B Street, S.E., Washington, D. C., Monday, May 22, 1911, at 10 A.M., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service. Candidates must be between twenty-two and thirty years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character. For further information, or for invitation to appear before the board of examiners, address "Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C."

## SOCIETY NOTICES.

AMERICAN PROCTOLOGIC SOCIETY.—Thirteenth annual meeting, Los Angeles, Cal., June 26 and 27, 1911. Headquarters and place of meeting, Hotel Alexandria, corner Fifth and Spring streets. The profession is cordially invited to attend all meetings.

LEWIS H. ADLER, JR., M.D., *Secretary*,
Philadelphia.

AMERICAN SOCIETY FOR THE STUDY OF ALCOHOL AND OTHER NARCOTICS.—The American Society for the Study of Alcohol and Other Narcotics will hold its fortieth anniversary meeting at Baltimore, Md., April 19 and 20, 1911. The sessions will be held at the Hotel Belvedere.

NEW ENGLAND HOSPITAL MEDICAL SOCIETY.—There will be a meeting of the New England Hospital Medical Society, Thursday, April 20, at 7.30 P.M., Kensington Building, Boylston St. Dr. Anne Worthen will read a paper on "Some Present-Day Interests in Dentistry." All are cordially invited.

MARGARET L. NOYES, M.D.,
*Secretary*.

CANADIAN MEDICAL ASSOCIATION.—The annual meeting of this association will be held in Montreal, June 7, 8 and 9, in the building of the Medical Faculty of McGill University. Inasmuch as the functions connected with McGill convocation and the McGill reunion take place on the two days preceding the meeting of the association, it is expected that the attendance this year will break all previous records in numbers.

## RECENT DEATHS.

DR. CHARLES TALBOT POORE, a prominent orthopedic surgeon of New York, died suddenly on April 4. He was born in New York, of Colonial Dutch ancestry, and was graduated from the College of Physicians and Surgeons in 1866. He had been for many years surgeon to St. Mary's Free Hospital for Children and also consulting surgeon to the Hospital for Ruptured and Crippled. Of late Dr. Poore had confined his practice principally to consulting work.

DR. WILLIAM HENRY DE COURCY, who died on April 6, at Baltimore, Md., was born in 1825. He practiced medicine for a number of years in New York City, but after his retirement lived at Cheston-on-the-Wye, Queen Anne County, Md. He was not married.

DR. JOHN H. SANBORN, who died on April 2, in Newport, R. I., was born at Pittsfield, N. H., in 1835. In 1852 he received the degree of M.D. from Berkshire Medical College, and practiced his profession until the outbreak of the Civil War. He then enlisted as a private in the Third New Hampshire Regiment and served throughout the war with that command. Subsequently he became a surgeon in the United States Army Medical Corps, and remained in that service until 1892. At the time of his retirement from the army he was quartered at Jefferson Barracks, Mo.; but he later removed to Newport, R. I., and resumed the private practice of medicine there. In 1896 he was made city physician of Newport, an appointment which he held till his death. He is survived by two daughters and one son.

DR. HENRY LYMAN SHAW, who died at Boston on April 2, was born in 1838. In 1859 he received the degree of M.D. from the Harvard Medical School, and subsequently served for a time as physician to the Boston Dispensary. In 1861 he was appointed assistant surgeon and in 1864 surgeon to the Massachusetts Charitable Eye and Ear Infirmary, and in 1892 became consulting surgeon to that institution. He was a Fellow of The Massachusetts Medical Society, a member of the American Medical Association, of the American Ophthalmological Society, of the New England Ophthalmological Society, of the Boston Medical Library, and of the Boston Society for Medical Improvement. He is survived by his widow.

## Original Articles.

# SCOLIOSIS WITH MARKED STRUCTURAL CHANGE AND ROTATION.

BY ROBERT SOUTTER, M.D., BOSTON,

*Assistant Surgeon, Children's Hospital, Boston; Orthopedic Surgeon to Long Island Hospital; Surgeon to the Massachusetts State Hospital for Cripples; Assistant Instructor, Orthopedic Surgery, Harvard Medical School.*

MANY things must be considered in the treatment of scoliotic patients that have marked structural change and rotation. The patient is often in a very poor condition and will not stand long and elaborate treatment. Very often the patient has been so shielded at home that the mental condition as well as the physical is not favorable to rigorous treatment. This paper is a plea for the more thorough treatment of stiff scoliotic cases, in many of which absolute correction of the curve seems practically impossible. Simple, flexible and uncomplicated curves are not considered in this paper.

That the rotation may be attached by pressure on the ribs is no longer a theory. Several years ago this was demonstrated by experiments on the cadaver, by Dr. Keene at the Harvard Medical School, the writer and others.[1] The most excellent work of Hoke, Seaver, Hoffa, Eulenburg, Bradford, Schultess, Nicoladoni, Wullstein, Lange, Shans and others have demonstrated the practicability of extensive and thorough treatment in difficult cases of scoliosis. Many problems are still to be solved as to the etiology of scoliosis, and a great deal has been done recently in this direction by Wullstein, Lovett, Bern, Adams, Feiss and others. While this is being done, thorough and systematic treatment of these difficult cases is well worth while, though the etiology in many cases cannot be perfectly traced.

The correction of the curve and overcoming of the rotation are of ultimate importance, but in some cases they are secondary and dependant on a preliminary redistribution of the body weight before actual correction of the deformity can be advantageously undertaken.

The general condition must be improved. Development exercises should be done systematically, all exercises taken in a position which brings a miminum strain on the deformity. This may be accomplished best by suitable machines for the purpose under skilled assistants. It is accomplished also at home to a less extent. The flexibility of the spine in all directions should be increased; having attained this, and improved the general physical condition, the state of mind and endurance of the patient is much better. The periods for eating, for rest and for work should be established with regularity. Correction of the deformity is started during the development and flexibility treatment; later it is carried to a greater extent and the points of greatest deformity attacked more vigorously. Exercises are adjuncts in the treatment and will not take the place of especially adapted corrective machines and apparatus applied to the deformity.

[1] "Study of the Effect of Pressure on the Curve and Rotation of the Spine." Am. Jour. Orthop. Surg., October, 1906.

The advanced case of scoliosis should not be trifled with. In addition to the appliances in which the patient is treated for three to four hours each day, the patient should have apparatus to wear when about, and other apparatus to wear when in bed. The amount of apparatus and the treatment necessary varies with the patient. The apparatus worn at night is made after a certain amount of correction has been attained.



FIG. 1. Form of jacket used for action on rotation; remodeled from plaster torso.

The night and day apparatus must be carefully adapted to the improvement. Corrective jackets follow the other treatment. They may be made by placing the patient in a position of maximum correction (see Fig. 12) by means of carefully applied pressure rods and pads and straps which may be applied to this machine and to others. A cast is made from the jacket applied; it is modeled to obtain the points of correction that were necessarily omitted at the time of applying the plaster to the patient. The patient is kept recumbent and successive corrective jackets applied either from remodeling the cast or from newly applied jackets. The apparatus has large windows (see Figs. 18 and 19), without which the patient could not tolerate the correction resulting from the remodelled cast. Windows in plaster or other jackets may be helpful, but the maximum use of the window in a jacket is obtained by remodelling the plaster torso, the jackets from which could not be tolerated without the windows (see Figs. 1 and 2).



FIG. 2. Notice oblique opening in front to allow a large window on front of right chest; pressure on the left front with corresponding window and behind on the opposite side.

In the forcible correction of curvature, head pull and shoulder pull, varying with the patient, from 100 lb. to nearly 150 or more, facilitates the correction of the curve and the rotation by means of pressure. The apparatus includes the neck whenever possible and the shoulders. While this is not always necessary, a much better purchase on

the spine and consequent better correction is obtained. In some cases inclusion of the head and neck cannot be carried out satisfactorily.

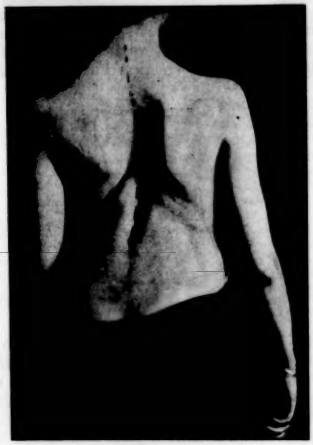


FIG. 3. Long rigid curve. Prominent left hip.

Following two or four months of corrective apparatus, a retentive apparatus is applied (see Figs. 1 and 2), maintaining the full correction in a comfortable way and the patient allowed to



FIG. 4. Two years later very little deformity remains.

go two to six months, when further treatment may be instituted, according to the requirements.

In short, after a thorough course of flexibility and muscular work in corrective machines, increasing the strength, endurance of the patient and pliability of the spine, machines on and in which the patient is placed are then used for decreasing the rotation and curve. These machines enable the surgeon not only to get the most effective correction without overtaxing the endurance of the patient, but adapts the patient gradually to the pressure, which later on it may be necessary to apply constantly. A corrective day and night apparatus is used, followed in two to four months by corrective apparatus made from a cast representing the maximum amount of correction the patient will stand, applied with



FIG. 5.

head traction and side and rotary pressure by means of apparatus. The patient may be kept recumbent in the last appliance. Later the cast is remodelled and trial apparatus applied and altered as may be necessary. Such apparatus is changed to suit the condition every two to four weeks or six weeks, depending on the rigidity of the spine and the condition of the skin at the points of pressure.

There is not space to enumerate the small details of all the cases. The details of one or more difficult and elaborate cases may be of interest to illustrate what has been done in many of those cases included in the following table, although the exact outline has been different in each case.

Fig. 5 before treatment. Heavy muscular man with rigid curve and rotation.

Figs. 6 and 7 represent about nine months of actual treatment in a period of eighteen months. This correction of a rigid curve and rotation in a strong muscular man shows what may be done in eighteen months.



Fig. 6. Notice pressure mark and disappearance of rotation at point of arrow.



Fig. 7. Notice pressure mark and disappearance of rotation at point of arrow.

This patient, a girl of fourteen years of age, came to the office seven years ago with a cervical curve to the left, a long dorsal curve to the right, a short lumbar to the left with marked rotation and extreme rigidity, the body weight so displaced to the right that the patient could not stand without apparatus, and then the weight-bearing was only on one leg. The spine practically ankylosed in three acute angles. The rotation and curve was so great in the dorsal region that the erector spinæ muscle had slipped over the spinous process from the right to the left side. Length of the legs were the same. The position of the bony points of the pelvis almost symmetrical. This patient when a small child had scoliosis. The treatment was not understood where she lived and many years were wasted. The deformity rapidly increased until she was fourteen years old, when, as she presented herself to the writer, the condition as above was present. She was not at all strong and could stand very little treatment at a time, and was very sensitive to pressure. She was treated about three months at a time, three times a year. Her muscles developed and her general health greatly improved, and the curvature straightened a little. In addition to the bad scoliosis, she



Fig. 8. Extreme case in course of treatment.

could not when standing carry the weight on the left leg. By means of her arms and a hitching gait she was able to keep her balance in an upright position with the aid of apparatus. At first the weight of the middle section of the body was worked on regardless of the whole scoliosis, and the weight of this section displaced until it almost reached the middle line. When this was accomplished the patient was able to stand long enough to get a photograph (see Fig. 8). This picture represents the patient after two years of treatment. The case was very stiff and hard to work over. Many intermediate



FIG. 9. Same case.

photographs and details are here omitted. Fig. 10 represents the position two years after Fig. 8. Notice the ease in standing, though there is more deformity than appears in the photograph. Fig. 11 represents the condition two years later. Notice the good position, very great improvement in rotation. With clothes on, the patient appears straight. She is here about twenty-one years old. Without treatment she would have been a bedridden cripple. Now she is able to be extremely active and has more health and strength than the average well woman of the same age.

It is difficult to tabulate scoliotic cases, as many individual differences and the small details must necessarily be left out from the table. All these cases are more or less rigid in their curve or rotation. They have all passed the stage of the simple curve and have structural changes with rotation and rigidity.

To facilitate an analysis, the cases are classed according to the severity of the curve, all things being considered, into Groups 1, 2 and 3. As the cases are all severe, there will be in Group 1 the least severe; in Groups 2 and 3, those of increasing severity. To obviate mentioning elaborate details, the cases are subdivided into those in which the curve was not benefited, those that were improved, and then those that were greatly corrected.

With the intelligent use of the means of treatment, every case was benefited as to its general condition, muscular tone, strength and endurance. Such improvement, while beneficial to the patient, is not recorded in this report, where only the effect on the curve is considered.

Bearing these facts in mind, the patients are placed in the groups to which they belong before and after treatment. The length of treatment, the age, the varying rigidity of like curves, the curve itself must all be considered.



FIG. 10. Same case.

One hundred and eighty-two cases of advanced scoliosis with complicated structural curves were treated. Sixty-five, or one third, were greatly corrected, 97 were improved; 20 while benefited in strength, endurance and health, their curves were not improved.

Considering the degree of rigidity as a factor in those that were greatly corrected, 39 were of

slight degree of rigidity, none were extremely rigid.

Of the cases that were markedly improved, 32 were slightly rigid, 28 were rigid and 13 were extremely rigid.

Of the cases that were improved, 3 were slightly rigid, 11 were more rigid and 8 were extremely rigid.



Fig. 11. Same case.

Considering the age as a factor: of those that were greatly corrected, 17 were under twelve, 28 were from thirteen to eighteen, 13 were from nineteen to twenty-five, 6 were from twenty-six to thirty-five, and 1 was from thirty-six to forty. Those that were markedly improved, 7 were under twelve, 38 were from thirteen to eighteen, 24 were from nineteen to twenty-five, 3 were from twenty-six to thirty-five and 1 was from thirty-six to forty. Those that were improved, 5 were under twelve, 9 were from thirteen to eighteen, 6 were from nineteen to twenty-five, and 3 were from twenty-six to thirty-five, and 1 was from thirty-six to forty. Those that were not improved, 5 were under twelve, 7 were from thirteen to eighteen, 5 were from nineteen to twenty-five, and 3 were from twenty-six to thirty-five.

Considering the length of treatment: those cases that were greatly corrected, 8 were treated one year; 32 were treated two years; 22 were treated three years; 2 were treated four years; and 1 was treated six years. Those cases that were markedly improved, 18 were treated one year; 34 were treated two years; 14 were treated three years; 4 were treated four years; 1 was treated five years; 1 was treated six years; and 1 was treated seven years.

Those cases that were improved, 3 were treated one year; 16 were treated two years; 4 were treated three years, and 1 was treated six years. Those cases that were not improved, 10 were treated one year; 3 were treated two years (very irregular), 3 were treated three years

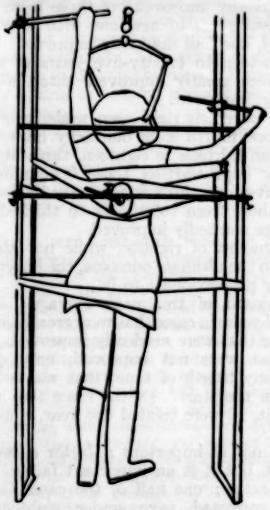


Fig. 12.

(very irregular), 1 was treated six years and 3, very irregular, less than one year.

Considering rigidity and age:

| | Total. | Greatly corrected. | Marked improvement. | Improvement. | No better. |
|---|---|---|---|---|---|
| **Slightly Rigid Cases.** | | | | | |
| Under 12 | 14 | 10 | 3 | 1 | 0 |
| 13–18 | 37 | 22 | 12 | 1 | 2 |
| 19–25 | 26 | 12 | 13 | 0 | 1 |
| 26–35 | 7 | 4 | 3 | 0 | 0 |
| 36–40 | 3 | 1 | 1 | 1 | 0 |
| **More Rigid.** | | | | | |
| Under 12 | 16 | 7 | 3 | 2 | 4 |
| 13–18 | 29 | 6 | 16 | 5 | 2 |
| 19–25 | 14 | 9 | 9 | 3 | 1 |
| 26–35 | 4 | 2 | 0 | 1 | 1 |
| 36–40 | 0 | 0 | 0 | 0 | 0 |
| **Very Rigid Cases.** | | | | | |
| Under 12 | 4 | 0 | 1 | 2 | 1 |
| 13–18 | 15 | 0 | 9 | 3 | 3 |
| 19–25 | 10 | 0 | 3 | 4 | 3 |
| 26–35 | 3 | 0 | 0 | 1 | 2 |
| 36–40 | 0 | 0 | 0 | 0 | 0 |

Considering the age and classing the cases according to rigidity: Of slightly rigid cases, under twelve years of age, two thirds were greatly

improved; of those from thirteen to eighteen years of age, almost two thirds were straightened, one third markedly improved; of those from nineteen to twenty-five, almost one half were straightened, one half were markedly improved; of those from twenty-six to thirty-five, over one half were straightened, one half were markedly improved. In other words, much may be expected with much deformity at all ages where there is a low degree of rigidity.

Of the more rigid cases, under twelve years of age, one half were greatly improved, one fifth were markedly improved; of those from thirteen to eighteen years of age, one fifth were greatly improved, one half markedly improved; of those from nineteen to twenty-five years of age, one fourth were greatly improved, three fifths were markedly improved.

Of the extremely rigid cases, under twelve years of age, one fourth were markedly improved; of those from thirteen to eighteen, three fifths were markedly improved; of those from nineteen to twenty-five, one third were markedly improved, and of those from twenty-six to thirty-five, one third were markedly improved.

The amount of rigidity, while not absolutely a guide to the ultimate outcome, the improvement is largely proportionate to it.

The length of treatment averaged two and one-third years in cases that were greatly improved and cases that were markedly improved. Of the cases that were not improved, only one was treated any length of time; that was a hopeless case from the start. Of the cases that received no benefit, 10 were treated one year, 9 were very irregular.

Age is not as important a factor as would be supposed, but it is an important factor, as may be seen below; one half of the cases that were greatly corrected were under eighteen; one third were over twenty-five. Cases that were markedly improved, over one half were under eighteen, one third were over twenty-five.

The general health, muscular condition and endurance is greatly benefited in all cases. To make an impression on the curve, length and perseverence in treatment is more of a factor than age, but the amount of rigidity of the curve is more important than the amount of curve. Age is a factor, but two thirds of those over twenty-five were greatly corrected or greatly benefited. Almost all cases may be improved; some greatly improved and severe cases with moderate rigidity may be greatly corrected.

While in these stiff and extremely deformed cases the treatment requires a good deal more time than for simple curves, and for some cases there is a sacrifice of personal comfort for a short period, still the fact remains that it is effective treatment and one of the easiest, and for the patient a most comfortable way to correct difficult rigid structural scoliosis in a comparatively short time. The future of the patient, the health, and to prevent a crippled or semi-invalid condition makes it necessary not to trifle in the treatment of advanced cases of scoliosis. The slight curves may be treated with much less sacrifice of time and less strenuous work, depending on the severity of the case. Difficult cases of scoliosis, with complicated curves, rotation and rigidity form a class which are often very discouraging to treat. The writer wishes to make a plea for very rigorous treatment in these cases, for not only may they be vastly improved, but treatment can in most cases prevent them from being badly deformed or crippled later on.

## ACUTE DILATATION OF THE STOMACH FOLLOWING SURGICAL OPERATIONS.*

BY EDWARD WALLACE LEE, M.D., NEW YORK.

THIS is an infrequent complication, but one of the most serious that may follow any surgical procedure. It is more liable to follow operations in the abdominal or pelvic cavities. Laymen frequently facetiously remark: "Doctor, you may consider your operation successful, but your patient died." This remark is often true. The operation has been successful, but an unforeseen, unavoidable, and often fatal complication, especially of this character, brings about unjust and unfavorable criticism of the surgeon's work. My limited experience has demonstrated the seriousness of this complication, and the subject is presented to this Association more for discussion than for any definite information the writer may have to impart.

It is fitting that this subject should be discussed before a society of this character, made up, as it is, of general practitioners and the exponents of many of the different so-called specialties in medicine. Frequently the surgeon after operation leaves his patient under the care of the family doctor, and, therefore, the latter must assume the responsibility of the after-treatment. He should be well prepared to recognize the various complications which may arise, and as this is one of the most serious, it ought not to be overlooked. As has been stated, it is especially liable to follow operations in the abdominal or pelvic cavities. We often see after abdominal section various gastric and intestinal disturbances which greatly complicate and retard recovery, and the early recognition of these may sometimes prevent a fatal termination.

### ETIOLOGY.

My own observations have not been such as to enable me to assign a cause that would directly produce this condition. There are many theories as to its cause,—the anesthetic, extent of operation, its location, all have been given as possible causes, but experience so far has shown that this sequela may follow various surgical procedures, regardless of the anesthetic, location, extent or character of the operation. Various other causes have been mentioned, such as spasm of the pylorus, volvulus of the stomach, kink in the duodenum, and pressure on the mesenteric vessels (irritation of the solar plexus, after removal of large uterine fibroid tumors, permitting of general ptosis of the

* Presented at the meeting of the Medical Association of the Greater City of New York, Feb. 20, 1911.

abdominal contents, which press down on the mesenteric vessels, thereby interfering with proper circulation and nerve function). But it is not to mechanical causes that I especially refer, for of course if *existing*, they are self *evident*.

It is a question whether this condition is due to a neurosis producing paralysis permitting the formation of gases, which would naturally be followed by gastric dilatation, or to an irritation continuously producing excessive gastric secretion. From my observation I am inclined to look upon it as due to a neurosis, some serious vasomotor nerve disturbance, rather than to any direct irritation of the stomach itself. Even after the stomach has been thoroughly irrigated, having been emptied of its contents, it will rapidly refill with secretion and become enormously distended with gas, and on post-mortem examination it has been found that the dilated stomach was free from contents with the exception of gas.

### DIAGNOSIS AND CHARACTERISTICS.

There are certain signs and symptoms of acute gastric dilatation which may be considered pathognomonic. On physical examination we find the stomach dilated sometimes to its normal capacity, but often extending into the pelvis. The condition is diagnosed by inspection and palpation, and the various lines of symptoms which accompany it. It usually comes on anywhere from one hour to twelve to fourteen hours after the operation. In one case I observed it within an hour after the patient had been placed in bed. The earlier symptoms are apparently those of shock, and when I say shock, I mean that extreme shock in which intolerable vomiting occurs. The contents of the stomach are followed by expulsions of glairy mucus, and, if the vomiting continues, of mucus streaked with blood. Often the vomitus is brought up in large gulps without straining. Aside from the vomiting, the surgeon's attention should be attracted by the rapid and constantly increasing pulse. The symptoms are often allied to those of internal hemorrhage, but this complication can usually be excluded by taking into consideration all the details of the operation.

The general condition of the patient is recognized as being serious from the first. The respirations are frequent and shallow, the pulse rapid, thready and of poor quality, and the skin often cold and clammy. The aspect of the patient indicates that his tissues are deficient in water; he is pinched and careworn, and appears to have aged suddenly. He is apt to be restless, and at times irritable. Diarrhea has been observed, and the urine is nearly always scanty. On palpation and inspection the stomach is usually found enormously distended and sharply bent upon itself, so as to form a gigantic "U." Generally on the lesser curvature there is a sharp kink. The stomach occupies the greater part of the abdominal cavity, cutting off the large and small intestines. Of course, the stomach walls are tightly stretched and consequently thin.

From an anatomical point of view there is a characteristic condition which is self-evident. That the stomach is enormously distended can be easily recognized, especially in thin patients, by the distention extending toward the left side; even causing bulging of the ribs as it forces itself up under these and presses on the diaphragm, thereby causing mechanical interference with the heart's action. This mechanical interference, combined with the general systemic shock, brings about a condition which it can be readily understood is likely to prove fatal. I emphasize the distention toward the left because on the right side of the upper abdominal region there is flatness on percussion, the abdominal wall at times being retracted and allowing the liver to be easily palpated. This point is worthy of special attention, as it is the means, if recognized, of greatly aiding in making a diagnosis of acute gastric dilatation.

I have seen a number of these cases, but will report but four or five. The cases observed have been males (between the ages of forty-three and seventy) with one exception, and this exception will be referred to later on.

Case I. A man forty-three years old had been operated for appendicitis. Two years later he developed hernia on the side of the operation. He was operated on for the hernia. He was a strong, robust man, with apparently no gastric or intestinal disturbances, but, being an army officer, it became necessary that his hernia should be operated on. Within four hours after the operation there was an enormous distention of the stomach — gastric, not intestinal, dilatation. The line of treatment which will be described was followed out. This case made a recovery.

The following three cases terminated fatally.

Case II. Man, sixty-five; gall-bladder case; removal of large single stone and the gall bladder. Within eight hours after the operation there developed an acute dilatation of the stomach. The general line of treatment was followed out, but death ensued thirty-six hours after the operation.

Case III. Suprapubic prostatectomy; a man sixty years old. Acute dilatation of the stomach followed within fourteen hours after the operation. In this case the patient was a cocaine habitué of highly nervous temperament and physically in bad condition. What these elements had to do with bringing about the acute dilatation and fatal termination are questions for your consideration.

Case IV. Suprapubic cystotomy for chronic purulent cystitis. Within one hour after the operation acute dilatation of the stomach with all its characteristic and distressing symptoms was apparent. Every form of treatment indicated was carried out. Fatal termination forty-eight hours after the operation.

As I have said, the cases I have observed have been males with one exception. This was a woman twenty-six years old, and the case does not, strictly speaking, belong to this category, as the acute dilatation did not follow surgical operation, but a burn. The latter was of the second degree, in extent about six inches square, and situated on the upper abdomen. The burn in itself was not serious enough to have produced the symptoms which followed within three hours after the injury, but within that period there was acute dilatation

of the stomach with all its characteristic symptoms. The case terminated fatally twelve hours after the injury. I refer to this case as tending to carry out the idea that acute dilatation of the stomach is of nervous origin rather than due to actual mechanical irritation of the stomach itself.

TREATMENT.

As has been stated, we find the patient in profound shock and the stomach enormously distended, not only with secretion, its so-called normal contents, but gas. The indication is to resort as soon as possible to remedies which will relieve shock and sustain the patient. Mechanical irrigation, washing out of the stomach, is *primarily* indicated. The stomach should be relieved of its other contents and gas by the introduction of the stomach tube, and if necessary the tube should be left in until there is no further indication for its use. In some cases it has been observed that even after thorough evacuation of the stomach contents, and the liberation of the existing gas, the stomach will rapidly refill not only with secretion, but with gas; therefore in many instances the permanent use of the tube is indicated.

The drugs indicated are, first, morphine, to relieve pain and shock, and next, strychnine, to stimulate the heart's action. This is given also for its effect on the vasomotor nervous system, with the hope that it may induce contraction of the distended stomach, for we know that strychnine is a powerful contractor, if I may use the term, stimulating the contraction of the involuntary muscles. We know that it is of service in acute dilatation of the heart, and we know that it is one of the most reliable remedies in post-partum uterine dilatation. Another remedy in use is eserine, which is indicated on account of its efficiency in bringing about peristalsis. This drug is strongly advised if there is any evidence that the colon or the small intestines are implicated in the existing distention.

Various surgical procedures have been recommended, *none* of which I have ever resorted to, for in the first place, the shock is so severe that any operation would necessarily increase the amount of existing shock. Gastrostomy and gastro-enterostomy have been suggested. The latter, I believe, is too complicated a procedure to be even thought of. Gastrostomy could be resorted to under local anesthesia, and I believe that it has certain indications which are at least theoretically logical.

The general line of treatment resorted to after all surgical procedures should, of course, be carried out to bring about if possible a favorable termination, though this condition is of so serious a character that a majority of the cases (75%) terminate fatally. So grave an affection should receive our most earnest consideration, and this, therefore, is the principal reason why the subject has been presented to you. The general literature and general discussion of this subject have been too limited for a condition so serious and important.

## ACUTE POST-OPERATIVE DILATATION OF THE STOMACH.*

BY ROBERT T. MORRIS, M.D.,

*Professor of Surgery at the New York Post-Graduate Medical School and Hospital.*

WHEN an artist cannot draw very well, he turns to making impressionist views, and that is the sort of picture I would draw of this condition. Acute post-operative dilatation of the stomach presents four salient features: (1) The initial disturbance; (2) increased peristalsis and antiperistalsis; (3) great dilatation of the stomach walls; (4) extreme amount of secretion.

We can group a number of features in the perspective.

(*a*) Hormones secreted in the stomach mucosa stimulate activity of secretory glands.

(*b*) Chromaffin secretions from ductless glands and sympathetic ganglia control motor activity in part, and conduct trophic influence in part.

(*c*) The cerebrospinal nerves conduct motor activity.

Shock, ether and toxins are all known to derange the action of chromaffin secretions, and that could account for the deranged action of the sympathetic nerves in these cases. Shock, ether and toxins may overstimulate the sympathetic nerves. Overstimulation of the inhibitory nerves of the stomach would have about the same result as cutting the vagus, which we know experimentally leads to enormous dilatation of the stomach. The stomach, like the heart, has a systole and diastole. So much for the dilatation part of the picture.

Shock, ether and toxins may all derange the action of the hormones, with consequent loss of control of the secretory glands, which would then give us some products in excessive proportion, and other products in diminished proportion. So much for the vast quantities of fluid in the stomach in these cases, and for the gas, when saprophytes take charge of material given over to them by deranged digestion controllers.

Shock, ether and toxins may all disturb the cerebrospinal system, but we may assume that this later development of the embryo is more resistant and less easily influenced than the primitive sympathetic system. This idea places the cerebrospinal system practically out of our picture.

Now let us get theories into concentrated space, and use Dr. Lee's case of burn of the abdomen for a bull's-eye. Let us think at a target, and see if we can hit that bull's-eye. It was a small burn of the upper abdomen, yet the patient had acute dilatation of the stomach and died in two days. How could a small superficial burn do all that?

Heat transforms some albuminous tissue into

* Presented at the meeting of the Medical Association of the Greater City of New York, Feb. 20, 1911.

At the meeting of the Medical Association of the Greater City of New York, on Feb. 20, Dr. Edward Wallace Lee read a paper on the subject of "Acute Dilatation of the Stomach (JOURNAL, page 562). He reported upon cases of his own, and among these was a case following a small burn of the abdomen. Our regular correspondent, who was present, has suggested that we publish the discussion of Dr. Morris in full, and as an original contribution.

toxalbumin. The toxalbumin overstimulated the inhibitory nerves of the stomach until they overcame the influence of the vagus. That gave the dilatation in the case. The toxalbumin intoxicated the chromaffins until their influence overexcited the peaceful hormones, and we had a crazy lot of products filling the stomach. The patient could not stand the effect of intoxicated malefactors snarling up his sympathetic nerves, and he died exhausted.

We need not talk about spasm of the pylorus, or angulation of the duodenum as adding to the patient's misery, because that would lead us to think to the left of our bull's-eye. We need not talk about differences in action between shock, ether and various kinds of toxins, because that would lead us to think to the right of the bull's-eye.

We need not talk about gastric dilatation of chronic form and unknown origin, because that would lead us to think over the bull's-eye.

We need not talk about cases of bowel dilatation associated with gastric dilatation, because that would lead us to think under the bull's-eye. Let us think straight at the target of the little burn case, and make at least one score in our subject.

What are we to do for our cases of acute gastric dilatation? Place the patient upon the abdomen, inclined a little to the right side. That will mechanically compress the dilated stomach and unkink the duodenum.

Wash out the stomach every hour or two if necessary with the stomach tube. That allows the postural mechanical resource to become more effective, and it takes away saprophyte poisons.

Many of these patients will progress steadily toward recovery from the very moment of application of these two simple resources.

## AN ANALYSIS OF FORTY-SIX CASES OF PROSTATECTOMY.

BY LINCOLN DAVIS, M.D., BOSTON.

(Continued from No. 15, p. 524.)

### CANCER OF THE PROSTATE.

THERE were nine cases of cancer of the prostate operated upon without mortality, three by the suprapubic route. In one case the entire gland with seminal vesicles was dug out en masse. The wound healed and the patient left the hospital greatly relieved only to die of the disease within six months. In the other cases the prostate was partly dug out, or burned through, relieving the obstruction, but without attempt at radical removal of all the disease. The wounds healed and the patients left the hospital relieved. Both have been heard from recently through their physicians, more than three years after operation. In one case there has been a return of obstruction, necessitating the use of the catheter, but the general condition of the patient remains excellent. In the other case, his physician states that the patient's health is certainly as good as before he was troubled with his prostate. Outside of some frequency, his bladder condition is good. In the latter case, the final pathological report on the specimen removed is missing, so that the diagnosis of cancer which was made by the rapid method during operation is open to doubt. In the other case, the pathological report is malignant adenoma; in view of the subsequent history, a secondary operation preferably by the perineal route is indicated, in my opinion.

Six cases of cancer were operated on through the perineum. In none of these was a radical removal attempted. Five patients left the hospital with obstruction relieved and good control. Four of these have died of the disease within a year of operation. One is living and comfortable nine months after operation. One patient had incontinence and a persistent perineal fistula after operation. He died of the disease within a year. In one case in which the gland was very adherent to the rectum, a tear was made in that viscus. This was the only time this complication has occurred in my series. An attempt was made to close it at the time, also two subsequent attempts, all failed. Finally, the rectal wall including the sphincter was split up to the fistula, and allowed to granulate. He had incontinence of both urine and feces for about two months, but later acquired control of both rectum and bladder, although the urine continued to be passed through the perineum. He has survived the operation for a year and is able to be up and about, but is slowly failing.

I have acquired a wholesome dread of operating for cancer of the prostate. My present feeling in regard to the matter is, in early cases the conservative perineal operation with removal of the median bridge is well worth while, often giving months or years of comfort with the possibility of a cure. In advanced cases operate only when you must to relieve obstruction. The radical perineal operation of Young does not appeal to me.

### TUBERCULOSIS OF THE PROSTATE.

My experience with prostatectomy for tuberculosis is limited to one case operated under the mistaken diagnosis of cancer; it was unfortunate in the extreme; the symptoms were retention and bleeding with a stony prostate. I operated by the Proust method. The wound never healed, the bladder was diseased and contracted, holding only 1 oz. The patient left the hospital wearing a perineal tube, without control of the bladder, and died of the disease four months later.

I am convinced that tuberculosis of the prostate is rarely if ever amenable to surgical treatment, the disease is practically never limited to that organ alone, and the best results will be obtained by general medical anti-tubercular treatment

### ABSTRACTS OF CASES.

#### PERINEAL PROSTATECTOMY FOR BENIGN ENLARGEMENT.

CASE 10. J. R., No. 158291. E. S. Age, sixty-seven years. Married. Machinist. Entered the hospital May 7, 1908. Service of Dr. Scudder.

*History.* — No venereal diseases. Six years ago began to have difficulty with micturition. Urine did not come freely. Occasionally had to use catheter. Fourteen weeks ago complete retention, physicians unable to catheterize. Suprapubic puncture, and later perineal section done at an out-of-town hospital. Since then has had to use the catheter at frequent intervals.

*Examination.* — Fairly developed and nourished. By rectum prostate greatly enlarged, hard and smooth. Healed scar in perineum. Double inguinal hernia.

*Urine*, high, alkaline, 1015, albumin slight trace, sediment, many pus cells, few blood corpuscles, triple phosphate crystals.

*Cystoscopic examination.* — No note. Patient put on constant drainage.

*Operation*, May 12, 1908, preliminary suprapubic cystotomy with removal of soft stone by Dr. Scudder.

May 25, 1908, perineal prostatectomy. L. D. Two medium-sized lateral lobes and one median lobe removed, double tube drainage and gauze packs to lateral cavities.

*Pathological report.* — Diffuse hypertrophy.

*Convalescence.* — Pulse poor, considerable staining, wound repacked. Tubes and packing out in twenty-four hours. June 1, right epididymitis. June 5, suprapubic wound closed. June 10, no leakage through perineum, good control. June 18, discharged on twenty-fourth day, perineal wound nearly closed, no leakage, no residual.

*Subsequent history.* — June 22, 1909, examined. Patient feels finely and is at work. Control of bladder not good, wears urinal for comfort. Can hold urine about one-half hour, then it is apt to dribble a little. Bougie catheter passed, residual 1 oz., urine slightly turbid. Wound healed.

CASE 12. T. E. W., No. 159929. E. S. Age, sixty-two years. Married. Mason. Entered the hospital Aug. 24, 1908. Service of Dr. Brooks. Recommended from Out-Patient Department. Diagnosis, prostatic obstruction (difficult to catheterize) urgent.

*History.* — No serious illnesses. For last dozen years has had trouble in passing water. At first difficulty in starting stream, then less and less force. Dull pain over the pubes, and ardor urinæ. Has used a catheter off and on for two years. Cannot use catheter now on account of pain. Three days ago had retention.

*Examination.* — Well developed, thin. By rectum prostate enlarged, moderately smooth, hard, somewhat tender. Catheter passed with some difficulty. Residual, 4 oz. foul urine. Right inguinal hernia.

*Urine.* — Aug. 26: Red, alkaline, 1012, albumin ¼%, sugar 0, sediment — blood and pus. Twenty-four-hour-amount, 1020 ccm.; urea, 1.23% — 12.5 gm.

*Cystoscopic examination.* — Bladder inflamed and bleeds easily, very little intravesical enlargement of prostate made out.

*Operation*, Sept. 1, 1908, perineal prostatectomy. L. D. Young's technic. Seepage, double tubes, and gauze packing.

*Pathological report.* — Chronic hypertrophy.

*Convalescence.* — Sept. 2, packing and tubes out. Sept. 4, small amount of urine passed through urethra. Sept. 21, discharged on twentieth day. Wound closed, interval urination.

*Subsequent history.* — Treated quite continuously since operation in Out-Patient Department for persistent colon cystitis, bladder washings, sounds, etc. October, 1909, can hold water all night, no dribbling, general health excellent. Both urines moderately turbid. Residual, 1½oz. Sounds 26–28 to bladder, wound healed. January, 1911, last note: Residual, 25 ccm. Residual has at times been as high as 4 oz.

CASE 14. J. Y., No. 160852. E. S. Age, fifty-eight years. Married. Printer. Entered the hospital Oct. 26, 1908. Service of Dr. Harrington.

*History.* — Denies venereal. During last two or three years has had gradually increasing difficulty in starting stream, frequency especially at night (four times). During past year symptoms have increased in severity. Five days ago retention and again two days ago, since then catheterization.

*Examination.* — Well developed and nourished. Systolic murmur. By rectum, moderate enlargement of lateral lobes.

*Urine* turbid, alkaline, specific gravity 1010, albumin ¼%. Many blood corpuscles and leucocytes.

*Cystoscopic examination* in Out-Patient Department. Hypertrophied and bleeding third lobe seen.

*Operation*, Oct. 29, 1908, perineal prostatectomy. L. D. Usual technic. Third lobe, size of horse chestnut, pulled down through prostatic urethra and cut off. Usual drainage and seepage.

*Pathological report.* — Six small lobular glandular masses. Diagnosis, hypertrophy.

*Convalescence.* — Oct. 30, tubes and packing out. Nov. 1, has interval urination through wound, passing a little urine through penis. Nov. 16, slight epididymitis. Nov. 19, 1908, discharged on twenty-first day. Epididymitis subsided, perineal wound nearly healed, occasional slight leakage from it.

*Subsequent history.* — Nov. 29, 1909, examination in Accident Room. Feels and looks perfectly well. No trouble with water. Occasionally gets up once at night to urinate. Works hard. No symptoms. Residual measured in Out-Patient Department, 1 dr. Wound healed.

CASE 15. G. M., No. 162431. S. S. Age, sixty-eight years. Married. Silversmith. Entered the hospital Feb. 13, 1909. Service of Dr. Mumford.

*History.* — Denies venereal. For past year has had to urinate at night two to four times. Within a month has had some difficulty in starting stream, some dribbling. Yesterday had retention. Relieved by catheterization.

*Examination.* — Rather feeble and tremulous. Systolic murmur. By rectum, prostate large, firm, smooth, not tender, soft rubber catheter passed and tied in. Patient noisy at night.

*Urine*, acid, 1020, albumin trace, sediment — pus and blood and squamous cells. Quantity varied from 25–50 oz.

*Cystoscopic examination.* — Marked intravesical enlargement of prostate, especially on right. Contour is smooth, some bleeding.

*Operation*, Feb. 23, 1909, perineal prostatectomy. In removing left lobe prostatic urethra torn into. Third lobe removed. Urethra sutured. Gauze packing. Double tube drainage and seepage, subpectoral infusion.

*Pathological report.* — Prostatic tissue weighed 70 gm. Some tendency to proliferation of epithelium.

*Convalescence.* — Gauze and tubes out in twenty-four hours. Patient unable to void. Single perineal tube inserted. Wound infected. March 1, put on urethral catheter drainage. March 12, abscess of testicle incised with evacuation of pus. March 30, passing urine through urethra for first time. April 17, passing urine naturally. Discharged seventy-third day. Wound closed.

*Subsequent history.* — Treated several times in the Out-Patient Department. Last note, July 21, 1909, nocturia 1–2. No frequency by day. No pain except slight smarting at head of penis on starting stream. Residual, 2 oz.; lowest residual recorded was 1 oz. Wound is healed. Has gained considerably in strength but is unable to work. Perfect control of bladder.

Case 16. A. B., No. 162 803. S. S. Age, forty-seven years. Married. Fish pedler. Entered the hospital March 9, 1909. Service of Dr. Mumford.

*History.* — Denies venereal. Since last autumn steadily increasing difficulty in voiding, with increasing frequency. Constant dribbling for last month. Residual of 25 oz. found in the Out-Patient Department.

*Examination.* — Well developed and nourished Hebrew. General condition excellent. Knee-jerks present. No evidence of spinal cord disease. By rectum, prostate large, smooth and tender. Soft rubber catheter passed without difficulty and bladder, which reached almost to umbilicus, emptied of a large amount of clear pale urine. Patient put on constant drainage.

*Urine.* —Amount varied from 48–145 oz. before operation. Pale, acid, 1005, albumen 0.

*Cystoscopic examination.* — Report missing.

*Operation*, March 12, 1909, perineal prostatectomy. Lateral lobes shelled out, found much smaller than expected. A small portion of a median lobe was left. Prostatic urethra torn, sutured. Usual drainage.

*Pathological report.* — Fibrous and glandular hypertrophy.

*Convalescence.* — General bronchitis following operation. After removal of perineal tube patient had partial retention and catheter was tied in through urethra. April 5, 1909, discharged on twenty-fourth day, patient passing urine naturally, wound almost closed.

*Subsequent history.* — May 10, 1909, Out-Patient Department notes: Wound healed, urine clear, residual less than ½ oz., rises once at night, no urinary symptoms. Nov. 2, 1909: No urinary symptoms whatever. Comes in for treatment of bronchitis.

Case 17. W. M. R., No. 162887. W. S. Age, seventy-nine years. Married. Manufacturer. Entered the hospital March 14, 1909. Service of Dr. Mixter.

*History.* — In good health until last year. Had abscess of testicle. Testicle removed by operation. Wound has not closed. Had an operation for inguinal hernia shortly before this. For two years has had difficulty and frequency of micturition. Lately has had to be catheterized, which is very painful; desires an operation to be relieved of catheterization.

*Examination.* — Well developed and nourished old man. Left testicle missing, discharging sinus in groin. By rectum prostate enlarged, slightly irregular, firm and tender.

*Urine*, normal color, acid, 1015, albumen slight trace. Sediment — numerous pus cells, squamous cells and bacteria.

*Cystoscopic examination* not attempted on account of pain caused by simple catheterization.

*Operation*, March 15, 1909, perineal prostatectomy. Gland tough and fibrous, enucleated with difficulty. Prostatic urethra torn. Very little bleeding. Usual drainage.

*Pathological report.* — Fragmentary masses together size of small potato. Glandular hypertrophy with purulent inflammation.

*Convalescence.* — March 18, all wicks out, good condition. March 21, sutures out, wound granulating, urine comes through wound. March 26, patient has control, sitting in chair. Condition excellent. Pulse, 80. Temperature, normal. Wound clean. March 28, temperature up. Facial erysipelas. The erysipelas spread to the neck and chest, temperature and respirations remained elevated. Patient became irrational and wandering. April 3, erysipelas better. Pneumonia of right lung developed. Patient failed rapidly and died April 4, on the twentieth day. No autopsy.

Case 19. J. F. A., No. 163867. W. S. Age, fifty-six years. Married. Lawyer. Entered the hospital May 10, 1909. Service of Dr. Mixter.

*History.* — Gonorrhea several times. Has been a heavy drinker in the past. For two years has had difficulty with urination. About one and one-half years ago began the use of a catheter at night. For last six months has used it two or more times a day. Residual, about 12 oz. Last two days has had great difficulty in passing the catheter and has to use it frequently.

*Examination.* — Well developed and nourished, pasty appearance, heart and lungs sound. By rectum, prostate hard, symmetrically enlarged, not tender. Coudé catheter passed in office and 8 oz. cloudy urine withdrawn.

*Urine.* — Acid, 1020, albumen 0, sugar 0.

*Cystoscopic examination.* — No note.

*Operation*, May 13, 1909, perineal prostatectomy. Two moderate sized lateral lobes, small third lobe shelled out through left lateral cavity. Pus in prostate. Usual drainage.

*Pathological report.* — Fragmentary masses of prostate showing glandular hypertrophy with retention cysts.

*Convalescence.* — May 14, packing removed, followed by severe hemorrhage. Wound repacked. Seepage continued. Patient blanched and exhausted. Pulse rose twenty beats. May 16, wicks removed, no bleeding, tubes out. May 18, no control. May 26, first urine passed through urethra. May 31, voids 5–6 oz. at a time with control. June 5, discharged twenty-third day. Wound granulating.

*Subsequent history.* — Epididymitis after discharge from hospital, sounds passed at intervals and bladder irrigated. Oct. 15, 1910, last seen. General health excellent. No urinary symptoms except rises once or twice at night. Perfect control, holds water three to four hours during day. Good stream. Wound healed. Residual less than 1 oz. Urine acid, turbid, contains colon bacilli and small amount of pus. Only complaint is loss of sexual power. Very slight power of erection.

Case 20. J. S., No. 164024. E. S. Age, seventy-three years. Married. Gardener. Entered the hospital May 20, 1909. Service of Dr. Scudder and Dr. Brooks.

*History.* — Gonorrhea in early youth. For two years has had pain and frequency of urination. Never used catheter. Early this morning patient unable to void, considerable pain. Local physician unable to catheterize. Patient brought to Accident Room.

*Examination.* — Well developed and nourished old man. Râles in bases of both lungs. Bladder distended to the umbilicus. Catheterization impossible on account of tight stricture in membranous urethra. Some bleeding. By rectum prostate felt considerably enlarged and hard.

*Operation*, May 20, 1909, perineal section with division of tight stricture of deep urethra. Dr. Scudder. Patient had pain and tenesmus and inability to pass urine after removal of catheter.

*Urine*, cloudy, acid, 1020, albumen trace, much blood.

*Cystoscopic examination.* — Through perineal wound showed marked projection of third lobe. Prostatectomy advised.

*Operation*, June 9, 1909, perineal prostatectomy. L. D. Prostate contained pus, very adherent. Lateral and median lobes removed with considerable difficulty.

*Pathological report* missing.

*Convalescence.* — Usual post-operative treatment. After removal of perineal tube on third day patient

unable to void, catheter passed through perineum. June 18, patient urinates through wound with partial control. June 22, 1909, discharged thirteenth day. Patient insists on going home. Good control but nearly all urine passes through perineal wound.

*Subsequent history.* — June 27, 1910, returns for re-examination. Perfect control. Only occasionally has to get up at night. No pain, feels fine, wound healed.

CASE 21. P. S., No. 164225. E. S. Age, sixty-two years. Widower. Gardener. Entered hospital June 3, 1909. Service of Dr. Brooks.

*History.* — Denies venereal. For four or five years has had difficulty with micturition. Two years ago retention, twice since, relieved by catheterization. Has been under treatment in Out-Patient Department for two months. Bladder irrigation, etc. Residual urine varied in amount from ¾ to 4 oz.

*Examination.* — Well-preserved man. Heart and lungs normal. By rectum, prostate moderately enlarged, especially on left.

*Urine*, cloudy, acid, 1028, albumen 0, sugar 0; urea 2.02%.

*Cystoscopic examination* in Out-Patient Department showed moderate intravesical enlargement of prostate with small median lobe which bleeds. Bladder only holds 3 oz.

*Operation*, June 5, 1909, perineal prostatectomy. Small lateral lobes. Usual drainage.

*Pathological report* missing.

*Convalescence.* — Good recovery. Tubes out in forty-eight hours. June 11, up in chair, comfortable. Partial control. June 21, discharged to Out-Patient Department, sixteenth day. Interval urination with good control. Some leakage through perineal wound. Residual, 1 oz.

*Subsequent history.* — June 26, 1909, Out-Patient Department note: Slight leakage from wound. Rises once at night. Residual, ½ oz. March 17, 1910, rises once at night. Holds urine three or four hours during day, perfect control. No urgency. Wound solid. Urine clear. General health excellent. June 23, 1910, general condition excellent, gained 15–20 lb. in weight. Perfect control. Urine clear.

CASE 22. P. F., No. 164255. E. S. Age, seventy-eight years. Widower. Shoemaker. Entered the hospital June 5, 1909. Service of Dr. Brooks.

*History.* — Sent in from Out-Patient Department with diagnosis, retention of urine and cystitis from prostatic obstruction. Has been in poor health for years. Chronic bronchitis. For ten years has had difficulty with micturition. Catheterization occasionally resorted to for last two years, daily for last five months. For last two weeks much pain and straining with dribbling, unable to pass catheter himself, has been catherized by a physician. Bladder distended, 18 oz. withdrawn by catheter in Out-Patient Department.

*Examination.* — Thin, wasted old man. Moist rales in chest. By rectum, prostate moderately enlarged, firm, not nodular. Put on constant urethral drainage.

*Urine*, cloudy, acid, 1012, albumen slight trace, urea 1.64%, 9.50 gm. in twenty-four hours. Sediment — blood and pus.

*Cystoscopic examination* not made.

Patient considered poor risk, operation undertaken at earnest solicitation of patient.

*Operation*, June 19, 1909, perineal prostatectomy. Lateral lobes shelled out almost entire. Prostatic urethra uninjured. No third lobe. Usual drainage.

*Pathological report* missing.

*Convalescence.* — Tubes and packing out in forty-eight hours. June 24, sitting in chair. July 6, interval urination through penis. July 16, urine voided naturally during day, some leakage at night. Perineal wound almost healed. Urine quite clear, residual ½ oz. Discharged to local doctor twenty-seventh day.

*Subsequent history.* — Letter of Aug. 24, 1909, reports that he passes urine naturally and without pain for the first time in five years. He reports the operation a marked success. His local physician reported verbally six months later that the wound was healed and his condition excellent.

CASE 23. S. C., No. 164709. E. S. Age, seventy years. Single. Farmer. Entered hospital July 5, 1909. Service of Dr. Brooks.

*History.* — Never had a sick day. Denies venereal. For past four years has had increasing difficulty in passing urine. First attack of retention two years ago, since then it has recurred six times. Relieved by one or two catheterizations. Two days ago, retention; catheterized once by doctor who was unable to pass a catheter a second time. Brought to Accident Room.

*Examination.* — Well developed, fairly nourished. Considerable arteriosclerosis. Bladder distended almost to umbilicus. Catherization impossible, considerable bleeding. Immediate operation advised. Prostate by rectum felt large, soft, symmetrical.

*Operation*, July 5, 1909, perineal prostatectomy. Usual technic. Two lateral lobes shelled out, small median lobe. Usual drainage.

*Pathological report.* — Very adenomatous type of glandular hypertrophy.

*Convalescence.* — Wicks and tubes out in forty-eight hours. July 10, patient up in chair, urine comes through wound but with control. July 17, urine beginning to come through urethra. July 27, urine passed naturally with slight leakage through perineum. Urine clear. No residual. July 29, discharged, twenty-fourth day.

*Subsequent history.* — Aug. 30, 1910, patient readmitted for closure of small perineal sinus which leaks a few drops during micturition. Perfect control of bladder. Urine pale, neutral, 1010, albumen 0, sugar 0. General health excellent. Has been cultivating a small farm. Has had no medical treatment since discharge.

*Operation*, Aug. 31. Sinus curetted out under ether.

Letter, Dec. 24, 1910: Sinus has opened again and leaks a few drops almost every day. Feels well except for constipation. Passes urine three or four times a day but seldom at night. No pain. States that he has been able to do all his harvesting alone.

CASE 24. H. B., No. 165329. E. S. Age, sixty-five years. Married. Shoemaker. Entered hospital Aug. 12, 1909. Service of Dr. Brooks.

*History.* — Patient speaks very little English. Never any previous sickness. For three years difficulty with micturition with pain and frequency. Has been catheterized daily for last eight days. Urine foul.

*Examination.* — Poorly developed and nourished Hebrew. Arteries slightly roughened and thickened. Bladder distended to umbilicus. One quart of high-colored urine withdrawn. Knee-jerks normal. By rectum prostate smooth, symmetrical, moderately enlarged.

*Urine*, cloudy, acid, 1025, albumen trace, sediment — pus, few red cells, no casts.

*Cystoscopic examination.* — Unsatisfactory on account of bleeding.

*Operation*, Aug. 13, 1909, perineal prostatectomy. Usual technic. Two lateral lobes, small median.

*Pathological report.* — Glandular hypertrophy with marked proliferation.

*Convalescence.* — Some staining, wash water quite red during first twenty-four hours. Tubes and packing

out in forty-eight hours and patient up in chair. Aug. 28, urine passed through penile urethra for first time. Wound closing rapidly, good control. Sept. 3, nearly all urine voided normally, perineal wound nearly healed. Catheter passed, no residual. Discharged twenty-first day.

*Subsequent history.* — May 23, 1910, personally examined in Out-Patient Department. No urinary symptoms whatever. Good control, wound closed. Has bronchitis, otherwise well.

Case 28. W. G. D., No. 167003. E. S. Age, sixty-two years. Single. Farmer. Entered hospital Nov. 19, 1909. Service of Dr. Harrington.

*History.* — No venereal. Has had pain and frequency with burning urination for some months. While on jury duty had retention with overflow dribbling. Catheterized for first time in office Nov. 18 and 32 oz. high-colored urine withdrawn. Bladder three fourths to umbilicus. Clothes urinous. Since catheterization, unable to pass any urine. Comes into Accident Room with bladder again distended to umbilicus. Thirty ounces withdrawn by catheter.

*Examination.* — Fairly well developed and nourished. Right inguinal hernia. By rectum prostate moderately enlarged, soft, symmetrical.

*Urine*, high, acid, clear, albumen 0.

*Cystoscopy* not done.

*Operation*, — ether, — perineal prostatectomy. Small lateral lobes, median lobe pulled down through urethra. One suture to urethra. Usual drainage.

*Pathological report.* — Glandular hypertrophy.

*Convalescence.* — Stormy. Nov. 24, temperature 103. Tubes and gauze out. Urine passes into dressing without control. Epididymitis of both sides, wound septic, some bleeding. Put on constant drainage through urethra and wound packed. Dec. 18, interval urination with control. Residual, 6 oz. Dec. 26, residual down to 3 oz. Very little perineal leakage and good control. Discharged Dec. 28 on the thirty-sixth day.

*Subsequent history.* — March 24, 1910, office note: Feels well. Does not rise at night to urinate. Holds water three hours during day. Good stream, no effort. Has had erections since operation, none before operation for a long time. Urine pale, clear, acid, albumen 0, residual ½ oz. January, 1911, returns to hospital for re-examination. Feels fine, no urinary symptoms, holds water three or five hours in day. Does not rise at night. Good stream, perfect control. Urine clear. Residual less than 1 oz. Has erections. Wound solid.

Case 29. J. G., No. 167326. E. S. Age, eighty-one years. Married. Carpenter. Entered hospital Dec. 11, 1909. Service of Dr. Harrington.

*History.* — No venereal. Always well and strong. One year ago had retention, relieved by medicine. Lately has had difficulty in starting stream. Two days ago retention, was catheterized by local physician. Catheter could not be passed a second time. Silver catheter passed by L. D. with considerable difficulty. Sent to Massachusetts General Hospital.

*Examination.* — Well developed and nourished. Vigorous for his years. Heart sounds irregular and feeble. Knee-jerk present on right, absent on left. Prostate, by rectum, large, firm, symmetrical. Soft rubber catheter tied in urethra.

*Urine*, high, acid, 1024, albumen ½%, sugar 0, sediment — blood and rare leucocyte. Unable to void when catheter was removed. Jan. 1, 1910, patient discharged with catheter tied in, to be under local physician's care. Operation not urged. Jan. 24, 1910, patient re-entered, life unbearable with catheter. Returns for operation.

*Operation*, Jan. 27, 1910, anesthol, perineal prostectomy. Lateral lobes shelled out, no median lobe. Usual drainage.

*Pathological report* missing.

*Convalescence.* — Considerable bleeding. Wound repacked. General condition fair. No bleeding into bladder. Feb. 1, 1910, wicks and drainage out two days ago. Urine voided into perineal dressing. Patient somnolent, slightly uremic. Feb. 4, bronchitis, persistent hiccough, no improvement of general condition, uremic. Feb. 8, condition better, control of urination. Feb. 12, first urine passed through penile urethra. Improving. Feb. 23, residual ½ oz., urine contains considerable pus. Bladder irrigation. March 22, discharged fifty-fourth day. Interval urination through penis. Perineal sinus persists. Good control. Dermatitis due to urotropin?

*Subsequent history.* — Dec. 24, 1910, letter from physician. Patient has been in country without medical care. Urinates about every hour by day and nearly as often at night. Some burning. Urine is cloudy, with considerable sediment. There is a small sinus at the site of wound which discharges a little urine at the time of urination. Good control. General condition has improved.

Case 30. H. W. B., No. 168659. E. S. Age, sixty-eight years. Married. Shoemaker. Entered the hospital March 5, 1910. Service of Dr. Scudder.

*History.* — Gonorrhea at twenty. Two years ago began to have frequency of micturition; this kept getting worse. Finally had retention. Urine drawn by local doctor several times. Treated in the Out-Patient Department for several weeks with catheterization and bladder irrigation without improvement. Residual urine varied from 5 to 9 oz. of foul urine.

*Examination.* — Well developed and nourished. Very nervous. Chest negative. Arteries somewhat hardened. By rectal examination, prostate moderately enlarged, smooth, non tender. Put on constant drainage.

*Urine*, turbid, rather foul, specific gravity 1024, albumen trace, sugar 0, sediment — microscopic blood and pus.

*Cystoscopic examination* in Out-Patient Department: Bladder walls injected and trabeculated. Prostate considerably enlarged. Numerous clots and shreds. March 16, drainage catheter removed. Bladder filled up, patient had to be catheterized again, unable to void.

*Operation*, March 19, 1910, gas and ether, perineal prostatectomy. Usual technic, small lateral lobes removed. No median. Usual drainage.

*Pathological report.* — Glandular hypertrophy.

*Convalescence.* — Gauze and tubes out in forty-eight hours. Control good. No bleeding. March 25, all urine comes through wound. March 31, passing urine through penile urethra. April 4, passing urine naturally with slight leakage through perineal wound. No residual. Urine rather foul. Discharged on sixteenth day.

*Subsequent history.* — Letter, Dec. 26, 1910, reports that wound is healed, there is no leakage, and has good control of bladder; has to get up twice at night; the urine is dark and scanty. Has backache, feels weak and unable to work. Has had no medical treatment.

Case 31. E. D., No. 168797. W. S. Age, sixty-four years. Widower. Farmer. Entered hospital March 10, 1910. Service of Dr. Mixter.

*History.* — Denies venereal. Sciatica three and one-half years ago confining him to bed for three months. For past year there has been increasing urgency and frequency with very slight pain on micturition. Considerable straining. Seven weeks ago passed bloody

urine with great pain. Since then there has been increased frequency and dribbling at night. At times is able to pass only a few drops at a time. For last week symptoms have abated somewhat.

*Examination.* — Fairly developed and nourished. Bladder distended half way to umbilicus. By rectum prostate symmetrically enlarged, firm in consistency.

*Urine* alkaline, specific gravity 1012, albumen 0.

*Cystoscopy.* — Bladder trabeculated, marked intravesical enlargement of both lateral lobes with anterior and posterior sulci. No median lobe, no stone.

*Operation*, March 18, 1910, gas and ether, perineal prostatectomy. Lateral lobes shelled out. In removing intravesical portion of left lobe, floor of bladder torn, also lateral wall of prostatic urethra. Usual drainage.

*Pathological report.* — Glandular hypertrophy.

*Convalescence.* — Wicks and tube out in forty-eight hours. April 1, patient has control, urination through penile urethra. Wound nearly closed. Discharged April 3, sixteenth day.

*Subsequent history.* — Letter of Jan. 8, 1911, states: "I am getting along fine, I think, for I can pass my water as well as I could when I was a boy. The wound is all healed." Since the operation he has felt well enough to remarry, but states that it is a case of "lost manhood."

Case 32. P. G., No. 168773. E. S. Age, forty-eight years. Married. Laborer. Entered hospital March 12, 1910. Service of Dr. Scudder.

*History.* — Recommended from Out-Patient Department with diagnosis of prostatic obstruction. Denies venereal. For three years has been subject to epileptiform seizures. Three since last June. Three years ago began to have difficult and painful micturition. Frequency increased to six or eight per day, six per night, much straining. Never passed any blood. Residual urine of 16 oz.

*Examination.* — Well developed, fairly nourished. Pupils equal and react. Arteries tortuous and palpable. Heart and lungs normal. Double inguinal hernia. Distended bladder palpable above pubes. Rectal examination: Prostate moderately enlarged, soft, smooth. Knee-jerks present. Sixteen ounces of clear residual urine drawn by catheter. No stricture.

*Urine* pale, acid, 1006, albumen 0.

*Cystoscopy.* — Moderate intravesical projection of lateral lobes with slight bar. Bladder wall trabeculated. Patient was examined repeatedly and residual urine varying from 12 to 20 oz. invariably found.

*Operation*, March 18, 1910, gas and ether, perineal prostatectomy. Small lateral lobes shelled out. Finger inserted into bladder, contracted neck felt, dilated with finger. Usual drainage.

*Pathological report* missing.

*Convalescence.* — Tubes and gauze out in forty-eight hours. March 24, stitches removed, wound clean. Passing a little urine by urethra. March 30, residual less than 2 drams. No difficulty in passing urine. No perineal leakage. March 31, discharged, thirteenth day.

*Subsequent history.* — Dec. 27, 1910, patient returns for re-examination. Feels fine, holds water three or four hours during day, rises once or twice at night. Good stream, no pain, perfect control. Full sexual power retained. Urine clear, residual 1 dram. By rectum no prostate to be felt. Operation for double inguinal hernia advised.

Case 34. J. V., No. 169577. W. S. Age, eighty years. Widower. Rope maker. Entered the hospital April 26, 1910. Service of Dr. Mixter.

*History.* — For two or three years, especially during the winter months, has had slightly increasing difficulty in urinating. Since Jan. 1 has had burning pain and some dribbling, has had to urinate every hour or two during the day and every two or three hours at night. One week ago had retention requiring catheterization and again last night.

*Examination.* — Well developed and fairly nourished, does not look his age. Heart and lungs negative. Arteries moderately hardened. By rectum prostate considerably enlarged, fairly hard and firm, almost nodular on right side.

*Urine.* — Smoky, acid, albumen trace.

*Cystoscopy* omitted.

*Operation*, May 3, spinal anesthesia, perineal prostatectomy. Two lateral lobes dissected out. No median lobe. Usual drainage.

*Pathological report.* — Glandular hypertrophy.

*Convalescence.* — Good recovery. No shock or bleeding. Tubes and packing out in forty-eight hours, patient in excellent condition. May 20, no control of urination until to-day. Urine passed through penile urethra. May 26, good control, considerable leakage from wound during micturition. May 28, residual 2 drams. Wound still leaks a little. Discharged twenty-fifth day.

*Subsequent history.* — Out-Patient Department note, June 7, 1910: Good control. Perineal sinus not closed entirely.

Dec. 28, 1910, returns in answer to letter for personal examination. Feels fine, no urinary symptoms. Rises once at night about 4 A.M., holds water three or four hours during day. Stream strong and natural, no pain. Perfect control. Urine clear, no shreds. No erections. Wound healed solidly, no tenderness.

Case 35. S. K., No. 169865. Age, sixty-six years. Married. Tailor. Entered hospital May 14, 1910. Service of Dr. Mixter.

*History.* — Three years ago, at the end of three months of increasing difficulty in urination, patient had retention. He was catheterized for five days by a physician. After that he was able to void, and has had very little trouble beyond slowness in starting stream since then, until last two weeks, when there has been great straining. This morning was unable to void at all, local physician unable to pass a catheter. Sent to the hospital.

*Examination.* — Fairly feeble Hebrew in apparently considerable pain. Chest emphysematous. Moist râles. Systolic murmur. Arteries tortuous and sclerotic. Bladder distended to within two fingers' breadth of umbilicus. Large scrotal hernia. Knee-jerks present. By rectum prostate large, firm and symmetrical. Patient catheterized and large amount of urine withdrawn gradually. Catheter tied in.

*Urine* bloody, acid, 1022, albumen trace, sugar 0.

*Cystoscopy* impossible without anesthesia.

*Operation*, May 24, spinal anesthesia, perineal prostatectomy. Two lateral lobes dug out, no median lobe. Usual drainage.

*Pathological report.* — Glandular hypertrophy.

*Convalescence.* — Tubes and packing out in twenty-four hours. Patient in good condition. May 27, epididymitis. Patient takes very little nourishment. Constant hiccough, uremia. May 31, improvement. Urine comes through wound. June 10, no control of urination yet. Epididymitis better. June 16, with cocaine, scrotum opened and pus of an infected hydrocele drawn off, wound packed. June 20, patient has some control. Scrotal wound granulating. July 2, general condition excellent. Good control. Some leakage from perineal sinus during micturition. Discharged to Out-Patient Department, thirty-ninth day. Residual, 1 oz.

*Subsequent history.* — Jan. 10, 1911, returns for personal examination. Slight pain in passing urine. Frequency about every two hours by day, at night from two to four times. Good control. General health much improved. Much troubled by a large inguinal hernia. Very small sinus persists in perineum, which leaks a few drops on urination. Urine — pale, slightly turbid. Catheter passed, no residual. Has had no local treatment since leaving hospital.

March 9, 1911. Holds water three to four hours. Urine clear without shreds. Residual, 3 drams. Perineal sinus has closed. Has erections at times, is troubled mostly by large inguinal hernia which truss does not retain.

Case 40. C. H. S., No. 171256. E.S. Age, seventy-eight years. Married. Retired. Entered hospital Aug. 8, 1910. Service of Dr. Brooks.

*History.* — For three years has had considerable frequency of urination. Two days ago, unable to void, catheterized by his physician. Catheterized every six hours since. This morning catheterization failed and patient sent to hospital.

*Examination.* — Poorly nourished old man in considerable distress. Marked arcus senilis. Tongue dry and coated. Unhealed carbuncles on back of neck. Epithelioma of tip of left ear. Heart, slight systolic murmur at apex. Lungs, scattered râles. By rectum, prostate considerably enlarged, especially on left side. Silver catheter passed and 12 oz. high colored urine drawn. Put on constant drainage.

*Urine* red, acid, 1015, albumen large trace, sugar 0, sediment—blood and pus.

*Cystoscopy.* — Not attempted on account of bleeding. Aug. 15, taken off constant drainage, passed a little urine naturally, then retention recurred, catheterization became very painful and difficult and caused considerable bleeding.

*Operation*, Aug. 22, 1910, spinal anesthesia, perineal prostatectomy. Lateral lobes shelled out, median lobe shelled out from floor of bladder. Usual drainage.

*Pathological report.* — Glandular hypertrophy.

*Convalescence.* — Good recovery. No bleeding. Sept. 6, wound clean and granulating. All urine comes through wound, but with good control. No note of residual. Patient is anxious to go home. Discharged fifteenth day to local doctor.

*Subsequent history.* — Letter of Dec. 28, 1910, states that wound is healed, there is no leakage of urine, passes water naturally without pain, holds it three hours during day, two hours at night. Has complete control of his bladder, urine is clear. General health is good.

*(To be continued.)*

## New Instrument.

### A NEW TONSIL-SEIZING FORCEPS.

BY LOUIS ARKIN, M.D.,

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Although there are many kinds of tonsil-seizing forceps now on the market, my apology for the following two illustrations and description is that the instrument is simple and is very effective for its intended purpose in the operation for the enucleation of the faucial tonsils with the cold snare.

The hooks or seizing part may be suited to the individual taste. The two modifications, which have been made by F. H. Thomas Co., by which this instrument differs from similar instruments, are (1) the opening (see A) of a little less than one eighth of an inch in each ring of the handle, and (2) the bend on the flat of the instrument (at B), so that the handle or proximal part of the forceps is in about the same parallel direction with hook or distal part, and both parts in the same plane.

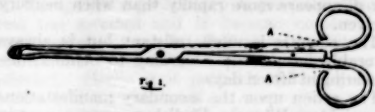


Fig. 1.

The cuts in the rings of the handle are not new, but are of great advantage in slipping the right sized loop of wire over the handle of the forceps when it seizes the tonsil. The advantages of the second modification are two: (*a*) The shape of the instrument easily conforms itself to the contour of the field of operation in such a way that the handle of the forceps does not at any time obstruct the view of the operator when using the forceps in the left hand to seize the left tonsil and in the right hand to seize the right tonsil; and (*b*)



Fig. 2.

to have the hooks of the forceps point in the proper direction to engage the tonsil, a *direct* thrust of the instrument with the operator's arm is used (as the proximal and distal parts are in parallel planes), instead of using a *side pressure* force, which method (as without the modification of the bend) causes pressure pains on the fingers that grasp the forceps, and the hand obstructs the view more or less. This advantage is clearly brought out in removing deep-seated or imbedded tonsils.

## Medical Progress.

### PROGRESS IN DERMATOLOGY.

BY HARVEY P. TOWLE, M.D., BOSTON.

(Concluded from No. 15, p. 545.)

#### CHAPTER 3 — CLINICAL STUDY.

Neisser has summarized the results obtained by the use of Ehrlich's remedy as follows.

"The visible symptoms retrograde and disappear in the most surprising fashion in nearly every case. The initial lesions become soft and lose their induration; in them and in the large condylomata as well it is often impossible to find the spirochete after twenty-four hours; the macular syphilides, the hard papular and the small papular syphilides, ordinarily so resistant, grow pale and become reduced to simple pigmentary spots; mucous plaques disappear; the large, indurated ganglia become soft and small; gummata are resorbed and their painful phenomena disappear; the ulcerations of tertiary or malign syphilis clear up within a few days

and are rapidly covered in; the paralyses and pains of cerebral syphilis disappear in a stupefying manner within a few days and, without exaggeration, within several hours."

In cases of chancre, epidermization is complete; according to Schindler, in two days; to Schultz, in five to eight days; to Gluck, in eight or nine days; and according to Michaelis, in one to three weeks. Microscopically, the induration persists, but disappears more rapidly than when mercury is given.

The adenitis is more resistant but is always favorably influenced; according to Schultz, disappearing in fifteen days.

The action upon the secondary manifestations is variable. Whereas Ehrlich reports a case in which the roseola vanished within three hours, Michaelis had cases in which it persisted from two to twelve days, while Hügel and Ruete encountered two cases in which the exanthem was resistant to treatment.

The Herxheimer reaction has been observed to occur in very different degrees of intensity and with very different doses. According to Herxheimer, the reaction fails in the majority of cases, which is a proof, in his opinion, of the superiority of "606" to mercury. He says that with mercury the reaction occurs because the drug kills only a portion of the spirochete and causes endotoxins to be liberated. No. "606," on the contrary, kills all perhaps without the formation of these toxins. Pellier, however, calls attention to the fact that the directly opposite contention has been used many times to explain other phenomena and especially the death of the syphilitic newborn. Loeb has seen a Herxheimer reaction of unusual intensity occur within two hours after the injection, reaching its maximum in twelve hours and disappearing with the roseola two to four days later.

Neisser asks if this reaction is the result of the death of the spirochete with the liberation of endotoxins or of a sort of stimulation of the parasites which, not being destroyed, produce endotoxins more abundantly. Ehrlich favors this latter hypothesis; it characterizes an active process and, consequently, indicates that the dose was insufficient.

The rapid healing of mucous plaques in an average time of from two to four days is universally admitted.

The papular syphilides yield less readily. Spiethoff is the only one who has seen them disappear more rapidly than the roseolæ. Wechselmann and Sieskind both remark upon the resistance of the large papular elements. Sieskind found the lichenoid forms more amenable. The explanation given for the resistance offered by the large papular forms is based upon anatomicopathological grounds. In lesions with abundant plasma cell infiltration and marked proliferation of the fixed tissue cells, the therapeutic remedy can easily reach the parasite because the vessels remain permeable. On the other hand, the vascular obstruction produced by the endarteritis blocks the entrance of the parasitotrope.

It is hard to estimate the percentage of recurrences both because of the difficulty of following up the cases and also because of the relatively short period since the introduction of "606." The responses to the inquiry of the *Medizinische Klinik*, however, show their relative frequency.

"There have been recurrences and there have been refractory cases, but their number has been relatively minimal." Thus Wechselmann reports 900 cases with 4 failures to respond to the first injection and with 2 incomplete results. Grouven failed to cure an extensive papular syphilide with two injections of 0.3 and 0.6 gm. Michaelis failed in an ensiform syphilide with 0.4 gm. A patient of Halberstaedter's had a marked recurrence of mucous plaques.

Volk thinks "606" superior to mercury in the secondary syphilides and particularly in the ulcerative lesions. In the palmar and plantar syphilides, their effect is about equal. In the macular and papular exanthems he believes mercury to act the better. This opinion is corroborated by E. Hoffmann.

Wechselmann has obtained good results with "606" in the treatment of the pigmentary syphilide which is notoriously resistant to mercurial treatment.

Gross vouches for the extraordinary efficacy of "606" in cases with ocular lesions, such as iritis, kerato-iritis, scleritis and chorioretinitis.

The raucous voice, whether due to erythema of the vocal cords or to papular or ulcerative lesions, yields rapidly. Glück has seen it disappear in one day, and in only one of his 14 cases did it last so long as twelve days. This one case was of a patient twelve years old who received but 0.2 gm.

"Malign syphilis and the ulcerating syphilides are the triumphs of arsenobenzol." Aside from the rare cases in which a second injection has been necessary to complete the epidermization, there is no discordance upon this point.

Three cases reported by Wechselmann illustrate the extraordinary influence of "606" upon the pains in the bones. These cases had resisted all manner of cures with the mercurials and the iodides and atoxyl and arsacetin as well. From the first or second night they were able to sleep, a condition which one of them had not known for five years. The curative action upon the osseous gummata is quite as remarkable. So rapidly do they heal that Ehrlich was lead to remark at the Königsberg Congress that it was impossible that anatomical modifications should have already taken place. That raises the question if these painful phenomena should not be attributed to the products of secretion by the spirochete. The disappearance of the pain could then be explained on the ground that "606" acts as an antineuralgic by combining with the toxin. It would be equally possible, however, to assume that such a combination acts in the manner of an antitoxin.

But, Ehrlich adds, this point of view is contradicted by certain observations in which the contrary effect resulted, i. e., the exacerbation of the pain.

Numerous cases of rapid healing of cranial gummata have been reported.

Herxheimer reports a gumma of the tonsil healed in three days with 0.3 gm.; of multiple gummata of the palatine arch in ten days with 0.45; in a gumma of the testicle resistant to mercury, improvement the day following. In some laryngeal gummata, however, it is to be noted that although there was considerable improvement, there was not *restitutio ad integram*.

All experimenters have been justly cautious in treating cases with ocular lesions. Nevertheless, Sieskind has treated with success optic neuritis of syphilitic origin.

Similarly, an undesirable action has been feared in the presence of cardiac affections. Wechselmann and Nikolai, who made a serious study of the effect of "606" upon the heart, noted no unfavorable action; rarely there occurred a lowering of tension. They have treated aortics without ill-effects, while Sellei has seen the pain disappear in an aortic with angina pectoris. On the other hand, Ehrlich reports a case of death from the rupture of an aneurysm and recommends extreme care in vascular affections.

Neisser reports a surprisingly rapid disappearance of all subjective and objective symptoms in a case of cerebral syphilis with optic neuritis, diverse ocular paralyses and intense cephalgia. Treupel obtained similar results in a recent case of apoplexy with bilateral ptosis and paralyses of the lower members. These results were confirmed by Von Zeisel, Wechselmann and Max Meyer.

In *tabes au début* the fulminating pains sometimes disappear very promptly. Alt and Nagelschmidt have noted, however, that at first the pain is aggravated. Therefore Nagelschmidt adopted the scheme of giving small doses at intervals and reports remarkable improvement. On the other hand, Max Meyer and Sellei obtained no results whatever.

In a woman seven months pregnant Glück reports that fetal movements ceased the day following the injection of "606."

Wechselmann has treated 5 cases of pemphigus neonatorum. Two were cured. Three died within a few days. At autopsy one showed miliary gummata of the liver; one, gummata of the heart; the third, although in a markedly atrophic state, showed no signs of intoxication. Death in these cases is attributed to an enormous discharge of endotoxins, although it must be remembered that most of these cases die under any treatment. In support of this hypothesis is quoted the statement of Reinke who, by Levaditi's method, could find no spirochete anywhere in the organs of a hereditary syphilitic, who died four days after the injection, except in the lungs and, even there, the parasites suggested agglutination.

Taege reports a case of an infant who developed a pemphagoid eruption nine days after birth. The mother received an injection of 0.3 gm. and within five days her infant was free from eruption. Inasmuch as but infinitesimal quantities of arsenic could be detected in the breast milk, the result could not possibly be attributed to arsenobenzol. Ehrlich's explanation is that the liberated endotoxins caused the production of antitoxins which were absorbed by the infant through the milk.

These observations led Scholtz to test the effect of serum obtained from a syphilitic forty-eight hours after receiving an injection of "606." Five cases were so treated. In two, the exanthem and papules disappeared almost completely. In three, after a preliminary improvement, progress was arrested and it became necessary to resort to mercury. In all five the motility and number of spirochete was only temporarily affected. Hence it is probable that only antitoxins had been formed.

As to the consequences of the injections, the pain upon intramuscular injection made the confinement to the bed counseled by prudence a necessity. This pain may last two or three weeks and require morphia for its relief. Care in making the solution exactly neutral and in reducing its bulk has succeeded in diminishing the pain of the injection to a very considerable extent. Kromeyer even succeeded in lessening it so that it was no greater than the pain ordinarily observed in injections of insoluble mercurials.

The injection is usually followed by a rise in temperature even as high as 104° (Schreiber) or 105.4° (Sieskind). Schreiber states that the more recent the infection, the higher the temperature. Various cutaneous eruptions (such as erythema, desquamation and urticaria) may follow the injection. Diarrhea and vomiting have also been observed.

In regard to the accidents which have been reported to have followed the use of "606," opinions differ as to whether they should or should not be attributed to the remedy.

E. Hoffmann reports an alarming weakening of the heart with fever, accelerated pulse, dyspnea, dullness at the base of the right lung and slight albuminuria which followed the injection of 0.3 gm. of arsenobenzol. Hoffmann attributed these alarming symptoms to an embolus consecutive upon a thrombosis produced in the gluteal muscles by a strongly acid solution.

Bohac and Sobotka report three accidents in 14 cases following the injection of an alkaline, methyl-alcohol solution. In one case there appeared four days after the injection nausea, vomiting, constipation, tenesmus and retention of urine which lasted four days. Ten days after the injection there was loss of patellar and Achilles reflexes. In a second case after 0.5 gm. there was violent pain, fever, rectal tenesmus and a retention which lasted nine days, while the cremasteric, abdominal and patellar reflexes were absent. His third case showed similar constitutional symptoms with retention of two or three days' duration and diminution of the patellar reflex on the left with complete absence on the right. The writers wondered if this large percentage of accidents in their small series might not be due to some change in the medicament. This Ehrlich denied and maintained that they were due rather to imperfect technic.

Likewise the cases of a double lesion of the sacral plexus reported by W. Pick and Eitner were ascribed to a faulty technic.

In a case of death reported by Fraenkel and Grouven following the intravenous injection of 0.4 gm. in 15 ccm. dilution, Ehrlich attributed the fatal result not to the mode of injection, but to the predisposition of the subject caused by the conditions in his central nervous system, the autopsy showing that there were areas of softening in the temporal lobes.

Various other nervous complications have been reported, for example, temporary ocular trouble (Spiethoff); an epileptiform attack four hours after injection in an old epileptic.

The only case which Ehrlich admits as not necessarily caused by a pre-existing malady is that of a very anemic woman presenting rebellious manifestations of laryngeal syphilis, formerly treated by atoxyl, who was found dead in her bed the day after the injection. At autopsy there were found no signs of intoxication; the liver showed cicatrized gummata; there was hyperplasia of heart and aorta. According to Ehrlich, the cause of death was the shock of the pain due to an acid solution joined to a certain degree of toxicity. All the other fatal cases, Ehrlich states, occurred exclusively in those who had serious affections of the nervous system, who even without the injection were "*candidats à la mort.*" Altogether about a dozen fatal cases among general paralytics and tabetics have been reported.

In his investigation of the action of "606" upon the nervous system, Willige found that of 35 cases, 5 had died. The dose had been 0.5 to 0.6 gm., and in one case, 0.8 gm. One was the case reported by Fraenkel, mentioned above; three others could not be directly attributed to the arsenobenzol; but the fifth (cerebral syphilis) presented symptoms of acute arsenical poisoning, and arsenic was recovered from the blood and organs.

Ehrlich formally denies optic accidents. "Not a single case of amaurosis has been reported to me and, in spite of the most energetic search, it has been impossible for me to find one case as a basis for the current rumors."

Busche concludes that the remedy, presented as non-toxic, may cause paralysis or depression of the nervous system by acute arsenical intoxication. Schreiber, however, rejects Busche's statements on the ground of faulty technic. All those who have seen cases treated with "606" have been astonished by the enormous proportion of intoxications to the total of cases treated. One may question whether, many times, the long manipulations preceding the injection have not resulted in the introduction of pathogenic germs. For example, Wechselmann got severe manifestations with three injections made in an asylum, while in the Virchow Hospital the preparation bearing the same number was borne perfectly.

*Indications and Contra-indications.*

In his last circular Ehrlich recommends the immediate intravenous injection of a minimum dose of 0.5 gm. in cases of chancre, especially if the patient is young and vigorous. He considers it rational to add also an energetic local treatment, such as extirpation, cauterization, etc.

No "606" is especially indicated in severe ulcerative forms; in malign syphilis; in palmar and small follicular syphilides; in cases refractory to mercury with frequent relapses or presenting an idiosyncracy against mercury.

In general, cases of extensive degeneration of the central nervous system are to be avoided. Alt's advice is to use "606" in general paralysis and in tabes only at the "very first aura" of symptoms. Cardiac lesions, especially angina pectoris and aneurysm, contra-indicate its use.

Although arsenobenzol may be useful in the treatment of iritis, it should not be employed if there are symptoms of atrophy of the optic nerve.

Affections of the viscera, especially if syphilitic, offer no contra-indications. Indeed, the results in syphilitic nephritis have been remarkable.

Cachexia may be favorably influenced by "606." Tuberculosis, unless in a very advanced stage, also does not contra-indicate the treatment.

*Elimination* is by way of the urine and the intestinal tract. In the urine, elimination begins very quickly, especially after an intravenous injection. According to Greven, elimination is completed more rapidly after subcutaneous injections than after intramuscular. Fischer and Hoppe found that it terminated in twelve to fifteen days in general paralytics and sooner in epileptics whose kidneys functionated well. They found arsenic in the blood from the twelfth to the fifteenth day.

The long continuance of elimination after an intramuscular injection is sufficiently explained by the persistance of the arsenic at the seat of the injection. Ehrlich demonstrated in his experiments upon fowls that the arsenic content of the necrotic tissue diminished progressively. In man, Orth demonstrated that the local effect of the injection was an extensive necrosis of the tissues. The time given for the duration of the elimination of arsenic varies within wide limits even up to seven weeks (Scholtz).

*Wassermann reaction.* — The study of the effect of arsenobenzol upon the Wassermann reaction has afforded rather discordant results. Moreover, the percentages have been based upon very different cases. For example, Lange first stated that in 51 cases the reaction became negative in nearly all within four weeks, but, later, in 260 cases, the reaction changed from positive to negative in only 153 cases. Glück observed the change in 5 cases out of 20; Meyer, in 4 paralytics out of 12; Wolf, in 1 in 9.

Iverson found the reaction to have disappeared in all cases in from twenty to forty days. Schreiber, at the end of fifty days, found only 84.6% negative. Neisser and Kuzmitsky obtained a negative reaction in 44% with the Wassermann technic and 19.2% with Marg's modification. Stern, Ailleurs and Neisser obtained only 10%.

The reaction may remain positive for a long time in patients clinically cured and may become

positive in patients with initial lesions who gave a negative sero-reaction at the time of the injection.

According to Lange, the reaction decreases in intensity gradually and at a rate dependent upon the initial intensity.

It has seemed to Hugel and Ruete that reactions which have become negative with "606" became positive again more rapidly than when this result has been obtained by mercurial treatment.

As regards the question of the therapeutic mechanism of "606," as to whether it is really a *sterilisatio magna*, arguments have been advanced on both sides. On the one hand, the hyperthermia is explained by Ehrlich by the hypothesis that it is the result of the liberation of endotoxins. On the other hand, the cure of a nursling by the milk of the injected mother argues in favor of the formation of antitoxins. Moreover, it is pointed out that autopsies upon infants dying soon after the injection have proved that the spirochete had disappeared from nearly the whole organism and that those which survived were much changed.

The chief study of the action of "606" upon the parasite has been upon the chancre and the papular lesions. Iverson reports the disappearance of the spirochete in two or three days and from the ganglia in three or four days. On the other hand, Sieskind found them persisting six or seven days. In the papular lesions, often noted as resistant to "606," Hügel and Rueter once found spirochete with perfect motility on the eighth day.

One effect of arsenobenzol rarely spoken of is the marked leucocytosis. Compared with calomel, Herxheimer and Schonnefeld found that whereas the average leucocytosis with calomel was 18,000, with "606" it averaged 28,000.

Without questioning Ehrlich's assertion that "606" is parasitotropic, Blasche maintains that other interpretations are permissible; for example, that it has a selective action upon pathologic tissues even greater than its spirillotropic action. It is also admissible that the properties of the arsenic are augmented or modified by its combination with dioxydiamidobenzol. Moreover, it may be questioned whether the remedy does not act as an antibody, rendering the toxins emanating from the spirochete innocuous.

On the whole, the opinion is unanimously favorable as to the action of arsenobenzol as an antisyphilitic. The question as to whether Ehrlich has attained his object of *therapia sterilisans magna* is, however, generally left open. Neisser accuses insufficient dosage as the reason why this result has been obtained in but a comparatively few cases. Sieskind, on the contrary, says that the failures are due not to insufficient doses, but to the fact that the spirochete, unlike the other spirilli, do not remain in the blood stream. But, says Neisser, "even if syphilis should never be exterminated, it will lose, thanks to the judicious use of the new weapon placed in our hands, perhaps not all but yet the greatest of the horrors which have hitherto been attached to it."

[Although the foregoing review was written some months ago, it is nevertheless applicable to the situation existing to-day. The number of cases reported has increased tremendously, but in the main the doubtful points are the same to-day as when this was written. We have perhaps gained in knowledge in certain directions, but many things still remain unsolved. We are still in the dark as to whether even apparent cures are cures in fact. The questions of dosage and of technic are still under investigation. Much doubt, to say the least, has been thrown upon the assertion of the non-toxicity of "606," and the best preparation for use still remains to be determined.

That "606" does act as an anti-syphilitic is beyond dispute, but it is growing clearer every day that the remedy cannot be used in all cases, and we are gradually learning more about its precise indications.

As time goes on and the use of the preparation becomes more general, we are hearing more and more of its undesirable effects. Whether such accidents can be fairly attributed to "606" is still an open question which our present experience does not yet qualify us to decide. Our only standard in judging of the effects of "606" is our previous experience with mercury. According to this standard, time alone is able to solve many claims now presented for "606."

For the present, therefore, it will be well to withhold any final decision as to the merits of "606" even while admitting its apparent efficacy.

It may be that in addition to the main therapeutic result there will be added some unexpected developments, as they have been called, "by-products." So great is the curiosity excited by "606" both among physicians and the laity that it is possible that the effect will be to drag the question of the prophylaxis of syphilis out into the light of day so that eventually society may openly acknowledge the existence of the disease and acquiesce in effective legislation to prevent its spread.]

## Reports of Societies.

### COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting of Wednesday, March 1, 1911, at 8 P.M.

The President, Dr. George E. deSchweinitz, in the chair.

#### THE ANATOMICAL EXPLANATION OF THE PARALYSIS OF THE LEFT RECURRENT LARYNGEAL NERVE FOUND IN CERTAIN REPORTED CASES OF MITRAL STENOSIS.

By Dr. George Fetterolf and Dr. George W. Norris.

The authors abstract and summarize the thirty-six hitherto clinically reported and autopsied cases of the above-mentioned condition. In view of the fact that so many different explanations as to the exact mechanism of the compression have been described, the authors undertake to arrive at definite conclusions based on a careful study of the anatomic relations in cadavers in which the organs had been hardened *in situ* before sectioning and dissection. They believe that direct

compression upon the aorta by a dilated left auricle is anatomically impossible. There is also no reason for accepting Kraus' suggestion of traction upon the nerve due to right ventricular hypertrophy. Persistent patency of the ductus arteriosus is also of only secondary importance. The indirect mechanism may be a variable one, but when compression is accountable for the recurrent paralysis, it must always be caused by the nerve being squeezed between the left pulmonary artery (which is often dilated) and the aorta or the aortic ligament. If compression is ever exercised by the auricle directly, it can only be by the tip of the left auricular appendix. Full bibliography. Numerous photographs of actual anatomic relationships.

DISCUSSION.

DR. JOHN H. MUSSER: It would seem that the pressure spoken of is similar in action to pressure against a cushion. Under such circumstances one would hardly think this sufficient, unless there was actual disease of the aorta, to bring about such change in the nerve trunk.

DR. FETTEROLF closes: Dr. Norris found one case on record in which at autopsy there were in the left auricle 3,000 ccm. of blood. This illustrates the amount of distention and pressure which can be brought to bear, and we believe that compression can and does account for the nerve paralysis. The fact that in some of the cases the paralysis appeared and disappeared as compensation failed or was restored is confirmatory of pressure as a cause.

## CHRONIC PANCREATITIS; ITS SYMPTOMATOLOGY, DIAGNOSIS AND TREATMENT; BASED UPON A STUDY OF 38 CASES.

DR. JOHN B. DEAVER: There are no pathognomonic symptoms, no short cuts to the diagnosis of chronic pancreatitis. Diagnosis is to be made only by the mental solution of an equation, the factors of which are obtained by three separate lines of inquiry, viz.:

(1) Anamnesis.
(2) The physical examination.
(3) The special tests designed to show disturbances of pancreatic function.

I have divided my cases into two groups according to the presence or absence of gallstones. Of the 73 cases, 35 had stones in some portion of the biliary passages and 38 had none at the time of operation. In these remarks I shall restrict myself to the non-calculous group, believing that these cases will give a truer picture of pancreatic disease *per se*. The series is still not entirely pure, since 12 had demonstrable changes in the gall bladder at the time of the operation. A careful history is of the first importance. The relation of sex to chronic pancreatitis as compared with cholelithiasis is reversed. The leading and most constant symptom is pain, which was absent in only 3 cases. I am inclined to interpret the presence of colicky pain as an evidence of involvement of the bile passages. No definite relation to eating or to any particular articles of food was brought out in this series. The prominence of nausea and vomiting at variable intervals indicates their importance as symptoms of the more severe type of the disease. The third important symptom is jaundice. A certain percentage of the cases of jaundice in pancreatitis is doubtless due to disease of the bile passages or to extension of inflammation from a catarrhal duodenum. All the cases are not to be explained upon mechanical grounds. The jaundice may come on painlessly. It may also be continuous. The surgical importance of these facts cannot be overestimated. When associated with rapid wasting and loss of strength, the clinical simulation of malignant disease of the head of the pancreas is complete, and cases have repeatedly been denied operation under the impression that operative treatment was useless, — a fatal blunder. The treatment of chronic pancreatitis begins with the amelioration of the predisposing cause. While medical measures may suffice for mild cases, and at times for more severe ones, others go from bad to worse under this treatment. Continued loss of weight, persistence of indigestion, recurring exacerbations, jaundice or a lowered tolerance for carbohydrates should cause the physician to advise operation. Especially binding is this if there be associated disease of the biliary tract. Mayo Robson was the pioneer in showing that free drainage of the biliary tract, and through this outlet, drainage also of the pancreatic ducts, would in many instances enable the pancreas to cast off the infection and resume its normal function. This is, in a nutshell, the principle of the treatment. The easiest and most advantageous method of providing drainage is by a cholecystostomy. If for any reason this is impracticable, drainage of the common duct should be carried out. At times, when the closure of the common duct is complete, and likely to be lasting, a cholecystenterostomy may be best. Drainage should be maintained for three or more weeks at least. The surgeon to-day makes the same plea for chronic pancreatitis as he made twenty years ago for appendicitis. Send the cases early before complications create a mortality.

DISCUSSION.

DR. JOSEPH SAILER: While the larger number of chronic pancreatitis must be relievable only by surgical means, there is certain experimental evidence that medical treatment may be of avail. In experiments upon dogs proof of this was obtained by ligation of the pancreatic duct. It was found that the dogs exhibited practically the same symptoms found in the human being suffering from chronic pancreatitis, and to a large extent these symptoms were abated by feeding the dogs with fresh pancreas secured from slaughter houses. The gain in weight and strength of the animals was really in some cases remarkable. It is difficult to explain these results upon a physiological basis, but I am of the opinion that the carbohydrate ferment in the pancreas is responsible, because it has been my observation in a much more limited number of cases than Dr. Deaver reports that the carbohydrate digestion is not as good in these cases of chronic pancreatitis as are the fat and proteid digestion. I think it must be manifest, too, upon theoretical grounds, which I believe is confirmed by operative experience, that there is a considerable number of cases of chronic pancreatitis in which operation is necessarily of no avail. Particularly is this true in that large group of chronic pancreatitis in which the parenchyma of the pancreas is not particularly affected, but in which the islands of Langerhans are sclerosed, associated with a severe form of diabetes. In those cases of acute pancreatitis with toxemia it has seemed to be desirable to discover whether there has been absorption of some particular toxin in the blood. I think that such a discovery would open up a new field for the study of pancreatic conditions. I have not felt that any of the methods that have been suggested, particularly by the German experimenters, for immunizing animals against toxins, are really of scientific importance.

DR. JOHN H. MUSSER: It would be interesting to learn from Dr. Deaver what proportion of cases presenting symptoms of chronic pancreatitis, and operated upon, were found to be free from pancreatic disease. Also, I should like to ask whether he has found in the

course of the disease the occurrence of sudden anemias, or the sudden exacerbation of the secondary anemia, that usually attends the disease. I have felt that the presence of pigmentation was of value and I should like to know whether in Dr. Deaver's experience this has any significance.

Dr. Deaver, closing: I confess that I cannot see any philosophy in the medical treatment of chronic pancreatitis. I make the statements contained in my paper without hesitancy and I believe they are statements that any man will make if he handles 73 or 75 cases of pancreatitis in the living body. Dr. Sailer's observation in regard to the carbohydrate digestion has been similar to my own. He further says that in certain cases, operation is of no avail. This is quite true. These are the late cases; the time has gone by. Chronic pancreatitis is due to a degree to places such as Carlsbad. We surgeons who are delving into the recesses of the abdomen know that Carlsbad brings us gallstones plentifully. If this is true, why not the results of gallstones, — disease of the pancreas. Dr. Musser raised the question as to what proportion of cases was diagnosed before operation. The only certain way to diagnose chronic pancreatitis is to open the belly. Those of us who do not advise opening the belly are taking an undue advantage of the confidence of our patients. As to sudden anemias, these we have not met with, nor with pigmentation.

Dr. Musser: You misunderstand my question; I asked whether there were many cases of disorder, presumably due to disease of the pancreas, which upon operation were found not to be due to pancreatic disease.

Dr. Deaver: I would say that about half of the cases were diagnosed before operation.

### MALPOSITIONS OF THE COLON, WITH SPECIAL REFERENCE TO THEIR CONGENITAL ORIGIN.

(Lantern demonstration.)

By Dr. Floyd E. Keene (by invitation).

Malpositions of the colon with the production of angulation is the underlying factor in the production of fecal stasis. With the idea of determining a possible relationship between the conditions existing during early life and those found in the adult, twenty-five autopsies were performed on infants. In the light of these observations, together with the clinical history so often associated with these malformations, we are warranted in concluding that, with but few exceptions, the conformations of the infant's colon correspond closely with those of the adult. The primary cause of vicious angulation productive of chronic constipation lies in some developmental abnormality of the colon. These angulations may be active from the earliest months of life or a faulty mechanism may perform its function normally until some extraneous cause, such as childbirth, lingering illness or trauma, converts what may be termed a potential angulation into an actual obstruction by disturbing the intra-abdominal equilibrium, which permits sagging of the intestine with the formation of kinks at the junction of a fixed and movable segment.

### WHAT CASES OF ANATOMICAL DEVIATION OF THE GASTRO-INTESTINAL TRACT ARE AMENABLE TO SURGICAL TREATMENT.

Dr. John G. Clark: From the observations of my associates, Dr. Floyd E. Keene and Dr. Ginsburg, on the embryologic and anatomic defects occurring in the gastro-intestinal tract, it is quite evident that many of the supposed cases of functional constipation have a long existent anatomic etiology. As we have analyzed the types of constipation we find that relief by surgical means is largely applicable to this particular class. It is farthest from our intention to hold out the view that the neurasthenic individual of constipated habit can be relieved by surgical measures. The necessary differentiation between what might be classed as a functional and a pathologically anatomic constipation is not always easy. My rule is to ascertain, first, the duration of the constipation, as to whether congenital or acquired; and, second, as to the means necessary to effect an evacuation of the bowel. The summary of the entire question hangs upon whether there is a definite anatomic defect constituting a partial obstruction. In the order of topographical observation of colonic defects, we have noted the colicky pains incident to a decensus of the cecum which, instead of resting at the brim of the pelvis, drops as a dilated pouch into the cul-de-sac. Wilms ascribes these pains to the failure of peristalsis and antiperistalsis to carry the food content upward, and finally past the hepatic flexure into the transverse colon. According to our viewpoint, however, we are more inclined to ascribe these symptoms to a defective emptying of the ileum into the cecum. When we first began to apply the x-ray to these cases for diagnostic purposes, we were inclined to view many cases as being seriously anomalous which we have since considered approximately normal. Treves many years ago pointed out the fact that one fourth of all autopsies showed the dependent loop of transverse colon well below the umbilicus, and he interpreted this as a significant possibility in the production of excessive degrees of constipation. As a result of our clinical experience, however, we view these cases only from the standpoint of the functional coefficient of the colon, for every surgeon has noted even exaggerated degrees of colonic ptosis without any marked degree of constipation. It is not possible, therefore, to establish an anatomical rule for the treatment of these cases, and it is not for the surgeon to initiate the treatment. Only upon medical failure can we justifiably accept these as surgical cases, and even then we must be guarded in our promises of relief. In my service at the University Hospital we have operated upon over fifty of these cases. Of this number we can claim 48% of cures. Of the remainder, some are improved, others are no better. These, however, represent the exaggerated types. Although not yet accepting with enthusiasm Lane's principle of radical extirpation of the colon with anastomosis of the ileum into the sigmoid, I am sure that in the exaggerated cases, where there is great redundancy and dilatation of the colon, occasionally this measure alone offers hope of relief. One cannot, however, be too careful in advising operations in such classes of cases, for we have all witnessed the operative mania instituted in cases of movable kidney and the gross misapplication of gastro-enterostomy in the hands of the operative novice or enthusiast who wields the scalpel with greater facility than he exercises his judgment.

### DISCUSSION.

Dr. John H. Gibbon: After what Dr. Keene and Dr. Ginsburg have shown us I believe it is probably impossible to say exactly what is the normal colon. The colon may appear to be very anomalous and yet be capable of performing functions. The cases to be operated upon are the cases giving rise to definite symptoms. I feel that Mr. Lane has gone beyond all reason in recommending and performing operations upon the colon. I think that the occasional operator, or the young man, needs to exercise much care in the selection of cases for operation. It took us some time

to learn that neurasthenia was not caused by movable kidney and not cured by operation upon it. If we follow Dr. Clark's advice we shall not go far wrong.

DR. S. SOLIS-COHEN: I should like to ask whether in this interesting study there has been found any large proportion of cases with narrowing of the lumen of the large intestine for a considerable distance. Occasionally in autopsies upon such cases of pulmonary tuberculosis I have observed such narrowing of the whole of the colon. Recently in a number of patients not tuberculous, studied by skiagrams, I have observed along with angulations or misplacements or anomalies, considerable tracts of apparent narrowing with delayed emptying. The question of adhesions arises in the instances of abdominal section; but in others there had been no operative interference. The propriety of resection of the narrow portions for obstruction or chronic pain is worthy of consideration.

DR. GEORGE E. PRICE: Neurologists have found that neurasthenia is more apt to be the cause of gastro-intestinal symptoms than the result of disorders of the digestive tract. The study of congenital anomalies of the gastro-intestinal tract should prove of interest in such conditions as epilepsy, where gastro-intestinal auto-intoxication is a factor of importance; also in the degenerative psychoses. As far as I can recall, no such studies have been made.

DR. JOSEPH SAILER: I think we make a mistake in confusing neurasthenia with malnutrition. Many such patients are not neurasthenic in the popular use of the term, but undernourished. Very often improvement in nutrition will bring about an anatomical correction of the part. Dr. Gibbon said that it took the surgeons a long time to find out that movable kidney was not the cause of neurasthenia. I have only to remind him that this was not for the lack of telling, for in a very able paper published in the early nineties the whole subject is carefully discussed.

DR. JOHN B. SHOBER: In 1898 I had the honor of reading before this college a paper upon "Anomalous Positions of the Colon, with the Report of a Case Discovered at Exploratory Operation." I had reviewed the literature and reported some fifty cases embracing all the types represented to-night and the conclusions then reached were much the same as to-night. A point in etiology not mentioned this evening was that many of the malpositions were considered to be the result of peritonitis occurring in fetal life, forming adhesions which would interfere with normal development and result in all kinds of deformities.

DR. JOHN B. DEAVER: I do not believe that post-operative dilatation of the stomach is due to any anatomical arrangement of the blood vessels and so forth; I believe it is due to infection or toxemia.

## Book Reviews.

*The Problem of Race Betterment.* By J. EWING MEARS, M.D., LL.D. Philadelphia: William J. Dornan. 1910.

This book consists of three papers (the first published in this JOURNAL for Oct. 21, 1909) all bearing on the subject of asexualization of idiots, criminals, defectives and perverts, to which is appended a short essay on the desirability of applying this procedure by law to certain classes in the community. The author prefers ligation of the spermatic cord to vasectomy for this purpose. The book is to be regarded in no sense as final, but merely as a polemic expressing the writer's opinions on a question which popularly and medically is still *sub judice*.

*A Textbook upon the Pathogenic Bacteria for Students of Medicine and Physicians.* By JOSEPH MCFARLAND, M.D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College, Philadelphia. With 211 illustrations, a number of them in colors. Sixth edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company. 1909.

Within the past decade several pathologies of a high order of merit have been published by American scientists. In no department of medical science does America take a higher rank than in bacteriology. This advanced standing is reflected in the textbooks, and in our judgment there is no better textbook on medical bacteriology in all its aspects than the standard work of McFarland, which in this last edition he has revised with customary thoroughness.

*A Textbook of Pathology.* By JOSEPH MCFARLAND, M.D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College, Philadelphia. Second edition, thoroughly revised. Four hundred and thirty-seven illustrations. Philadelphia and London: W. B. Saunders Company. 1910.

The first edition of this work appeared in 1904. The author states in the preface of this new edition that within the year preceding its issue the work was gone over from cover to cover and a thorough revision made. It contains an enormous amount of information and is a book characterized by clear and concise statement. A striking feature is the wealth of illustrations, which have been carefully selected from a great number of standard textbooks and special articles. It is a work more adapted to the needs of the clinician than to those of the undergraduate student in pathology. The sections dealing with pathological histology, especially cytology, are insufficient for the worker in a present-day laboratory.

*Organic Analysis Chart.* By W. HARRISON MARTINDALE, Ph.D. A supplement to the Extra Pharmacopœia. Fourteenth edition. London: H. H. Lewis. 1910.

This is a chart, in book form, relating to the recognition of organic chemical bodies used in therapeutics. The plan is one of elimination by the application of a number of systematic tests with heat; heat and NaO.H; $H_2SO_4$, cold and with heat; $HNO_3$; nitrogen, phosphorus, sulphur and halogens tested for in the usual manner; specific gravity and solubility; ferric chloride; alkaloidal reagents, etc.

The reviewer has not had the chance to try the schemes of tests, but the plan of elimination adopted by the author has the appearance of much value.

THE BOSTON

# Medical and Surgical Journal.

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## RESTRAINT OF THE INSANE.

The care of the insane and particularly of those who through the character of their maladies are difficult to control has for many years been a subject of interest to lay humanitarians and to physicians. The matter of restraint and the form such restraint should take has been recognized as a problem of fundamental importance and also as one impossible of solution through any general formulation of rules. Those who have studied and written on the subject have differed somewhat widely as to what constitutes restraint and as to how much and under what conditions it should be employed, but the definite result of the investigation of the past years has been an increasing disuse of force in the care of the insane. This has been brought about partly through the influence of public opinion, but much more through the efforts of the superintendents and those in charge of insane hospitals, who have clearly seen their problem and met it fairly. As a result, restraint of any sort has been reduced to a minimum, but that minimum remains and doubtless will remain as long as insanity takes on forms of extreme violence.

Legislation in the matter is clearly unnecessary and, in fact, harmful to the best traditions of medicine as a profession and of society at large. Medical treatment, whether of the insane or of the bodily sick, must be left to the judgment of the specially trained and not to any arbitrary outside authority whatever. If malpractice results, the offender may be called to account through the ordinary processes of law, and not otherwise. Only by training men for special work and then trusting them completely is the greatest efficiency to be secured.

It is, therefore, regrettable that a bill should have been introduced into the Massachusetts Legislature, by Dr. L. Vernon Briggs, which aims "to prohibit certain forms of restraint on patients in public or private hospitals or sanatoriums." A hearing on this bill was held last week before the Committee on Public Charitable Institutions. It was largely attended and the bill met a practically united opposition on the part of the medical profession, including the superintendents of hospitals. Those who spoke in favor of the bill were the petitioner, Dr. Albert Evans, several clergymen whose knowledge of the actual conditions was evidently inadequate, and one or two others. The argument of the proponents, in general, was that restraint was rarely necessary and when required should be administered in a certain way fixed by law under penalty of fine. In other words, the superintendent of a hospital, who, under existing conditions, is wholly responsible for the care and treatment of his patients, is to be held to account for the proper performance of his duties by legal enactment, thereby curtailing his initiative and freedom of action. The clergymen who spoke were moderate in statement but were inclined, as the bill itself does, to assume conditions which do not exist.

The opposition was vigorous, searching in its criticism and at times indignant. Dr. Henry R. Stedman, chairman of the Board of Trustees of the Taunton Insane Hospital, showed that only a fraction of one per cent of insane patients in hospitals were under any form of restraint during a recent month. He felt that the bill struck at the roots of efficiency by restricting the powers of the authorities. Dr. George T. Tuttle, of the McLean Hospital, regarded it as doubtful policy to prescribe by law how sick persons should be treated. Dr. H. W. Mitchell, of the Danvers Hospital, summarized the significance of the bill in saying that "it substituted legislation for medical intelligence." Dr. George W. Gay, who represented The Massachusetts Medical Society, and Dr. John G. Blake, senior physician at the City Hospital and trustee of the Gardner State Colony, spoke with some indignation regarding the implications of the bill and the consequent reflection on the medical profession. Dr. George L Walton adequately refuted the charge brought by Mr. C. W. Barron that Massachusetts was twenty years behind the times in the treatment of its insane by reading a letter from John Koren, expert special agent of the Department of Commerce and Labor, in which he stated that Massachusetts stood foremost among the states of the union in the care

and treatment of the insane. Dr. Owen Copp, executive officer of the Massachusetts State Board of Insanity, showed by statistics that the amount of restraint has steadily decreased in Massachusetts during the past fifteen years and that the number of patients under any form of restraint is well under one per cent.

In general, the discussion at the hearing showed that the greatest activity has prevailed for many years in reducing forcible restraint and that Massachusetts has had an enviable record in this regard. No evidence was adduced to show the necessity or even desirability of legislation such as that proposed in Dr. Briggs's bill, which in last analysis really does not prohibit restraint, but simply legalizes it. The best results in humane treatment can undoubtedly be secured by appointing the very ablest men obtainable to the positions of medical responsibility in our hospitals and by trusting them implicitely to enforce the necessary discipline among their subordinates. It is also desirable to secure attendants of a high degree of fitness and to provide adequate remuneration for their services. Under these conditions, it is not to be doubted, as has been proved by the experience of the past, that the future will show continued progress in the treatment of the mentally afflicted.

## THUCYDIDES AND THE ATHENIAN EPIDEMIC OF PLAGUE.

THE epidemics of bubonic plague which, for a good part of the winter, prevailed in the orient, and in certain places are still unchecked, have revived interest in some of the earlier famous historic pestilential appearances of this scourge. In the issue of the *Münchener Medizinische Wochenschrift* for March 14, Dr. Schröder summarizes the account given by Thucydides of the epidemic which broke out at Athens in 431 B.C., the opening year of the Peloponnesian War. The infection apparently traveled from Ethiopia, Egypt and Libya to Persia, and thence in ships to the European continent. In Greece it first broke out at Piraeus, the port of Athens, and spread thence to the upper city. In both places it found favorable ground for its development, owing to the overcrowding of the city with Attic refugees, the lack of hygiene, the inadequacy of food.

Thucydides describes most vividly the symptomatology and clinical course of the disease. The first signs were headache and redness and inflammation of the eyes. Soon there appeared bleeding from the mucous membranes, cough, extreme fever, unquenchable thirst, pallor, collapse, coma, death. Many died after a short sickness. Those in whom the disease lasted a week or ten days developed numerous ulcers on the body, and profuse diarrhea. Few recovered.

Though Thucydides had nothing to say about etiology, he seems to have recognized the infectious nature of the plague, for he observes that those who tended or approached the sick were most liable to the disease. No treatment then devised had any power over the infection, and in the absence of any sanitary measures of prophylaxis, it ran its course among the people unchecked. How many perished is not known. Pericles himself died of it in 429 B.C. Probably the demoralization as well as the actual number of deaths it caused contributed in no small measure to the defeat of Athens in the war and her ultimate downfall. The story told by Thucydides, like Defoe's "History of the Plague Year in London," is a classic of medical description and deserves to be known as one of the earliest extant contributions to the knowledge of this great oriental scourge.

## SCIENCE AND METHOD.

IN the issue of the JOURNAL for Jan. 5, we noted an address by Dr. Charles S. Minot, of Boston, before the American Association for the Advancement of Science, on "The Method of Science." Dr. Minot emphasized particularly the growing precision of science both in observation and in deduction. The current issue of *Science* for April 14 contains an extended critique of his paper and reply to some of his assertions. Its writer, Prof. S. M. Patten, of the University of Pennsylvania, considers Dr. Minot's address "a new presentation of a topic fully discussed from the attitude of pre-evolutionary thought, but in such manner and from such premises that its logic cannot serve as a basis for present problems." With the increasing accuracy of means of observation, research under the new science has reduced itself to a series of experiments and measures. The tendency is to regard these as ultimate and to consider that there is little likelihood of error or fallacy in deductions from them. But this is what the writer of the critique believes often to occur. In enthusiasm over method, over the mechanical recording of data, the observer loses his perspective, makes arbitrary deductions and fails to grasp the far-seeing human generalization that

includes all the elements involved. In the perfection of our means of observation, we are prone to concentrate our attention on them and go astray in a hopeless field of irrelevant detail, losing sight of the real meaning and importance of the question under study. Method is essential, but after all it is only the machinery of science, whose directing and motive agent should be a broad and constructive rationalism.

## INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY.

In the issue of the Journal for Feb. 16, we published an editorial giving preliminary announcement of the Fifteenth International Congress on Hygiene and Demography, which it is proposed to hold in 1912 at Washington, D. C. Further information relative to this Congress has now been received. The date has been set for the week of Sept. 23–28, 1912. Invitations to participate in the Congress have already been accepted by twenty-two foreign governments, including Argentina, Austria, Belgium, Brazil, Cuba, Denmark, France, Germany, Great Britain, Greece, Holland, Hungary, Italy, Japan, Mexico, Norway, Russia, Spain, Sweden and Switzerland. The governors of the several states of the union have also been invited to appoint each a state committee of not more than five members to co-operate with the National Committee on Organization. Active membership in the Congress is open to any person interested in public health or vital statistics, on payment of a fee of $5, which also entitles him to participate in the proceedings and to receive a copy of the published transactions. The continuity of the Congress with those that have preceded it is maintained by a permanent international commission, with headquarters at Berlin.

## DISTRIBUTION OF SPOTTED-FEVER TICK.

In Circular No. 136 of the Bureau of Entomology of the United States Department of Agriculture, issued on March 31, F. C. Bishopp describes and illustrates by a map "The Distribution of the Rocky Mountain Spotted-Fever Tick, *Dermacentor Venustus*." This insect occurs most thickly in the northern part of the Rocky Mountain region in the United States, the frequency of its distribution in the several states in decreasing order being as follows: Montana, Idaho, Washington, Wyoming, Colorado and Oregon, Utah, Nevada, California, New Mexico. The immature ticks live almost exclusively on small mammals, and adults on large domestic animals. A subgenus of ground squirrel is probably a very common host. Since it has been demonstrated that this wood tick is the principal if not the sole agent in transmitting Rocky Mountain spotted fever to man, the knowledge of the extent of its dissemination is important, for it will facilitate measures to control the tick in regions where it already exists and to prevent its introduction into uninfected areas.

## MEDICAL NOTES.

Alleged Discovery of a New Element. — It is reported from Cincinnati, Ohio, that Prof. C. T. B. Fennell, of the University of Cincinnati, has made preliminary announcement of his discovery of a new element similar to radium. The details of this alleged discovery have, however, not yet been made public.

New Jersey State Hospital for the Insane. — The thirty-fifth annual report of the managers and officers of the New Jersey State Hospital for the Insane at Morris Plains records the work of this institution for the year ending Oct. 31, 1910. During this time 519 new cases were admitted and 460 patients were discharged, leaving 2,118 inmates in hospital at the close of the year.

Use of the Kinematograph in Medicine. — It is reported from Philadelphia that at a recent meeting of the Alumni Association of the Philadelphia Medico-Chirurgical College, kinematographic plates were employed to illustrate a lecture by Dr. Theodore H. Weisenburg on "The Gait, Station, Tremors and Other Symptoms of Various Forms of Nervous Disease." The possible applicability of this method to use for the obtainment of physical records which might be valuable for subsequent reference and for didactic purposes was suggested by Dr. Walter G. Chase, of Boston, in an article on "The Use of the Biograph in Medicine," published in the issue of the Journal for Nov. 16, 1905 (Vol. cliii, p. 571).

Longevity of British Physicians. — The issue of the *British Medical Journal* for April 1 contains obituaries of three English physicians, Dr. Thomas Reid, of Glasgow; Dr. William Paley, of Peterborough, and Dr. Thomas Dobson, of Leeds, at the ages of eighty, ninety-four and ninety-three years respectively. Doubtless this is an exceptional coincidence, but it would seem that in England the profession

does not wear out those in its service so prematurely as is often unfortunately the case in our own country.

A LIVING ENGLISH CENTENARIAN. — It is reported from London that, on April 10, Mrs. Henry Essex Bristow, of Southwark, celebrated the supposed one hundred and fourth anniversary of her birth. She is said to be in excellent health. As her son is a canon of Southwark Cathedral, the tale of her longevity may undoubtedly be accepted as veracious.

THE END OF THE BROWN DOG OF BATTERSEA. — In the issue of the JOURNAL for March 24, 1910, we published, on page 406, an account of "The Brown Dog of Battersea," an effigy intended as a protest against the supposed sufferings of animals at the hands of medical experimenters. From time to time since that date there have been notices, in various English journals, of contentions that have arisen over this statue and of attempts to deface, remove or protect it. It is now finally announced that "pursuant to an order made on March 8 by the Battersea Borough Council, the brown dog has been broken up and the inscription on the base of the monument erased."

MR. ROOSEVELT AND "WILFUL STERILITY." — In a recent editorial in the *Outlook*, Mr. Roosevelt returns to the consideration of race suicide and the numerical regulation of the American family. The "new nationalism," he declares, demands that every household should contain at least four children. Upon all which fall below this irreducible minimum will come the "curse of wilful sterility." Whatever may be the validity of Mr. Roosevelt's new nationalism, his ideas about race suicide seem at bottom pretty sound, and as a coiner of apt phrases he is almost as felicitous, though not so prolific, as his kindred spirit, Mr. Kipling.

IMPORTANCE OF DISINFECTION AFTER INFECTION. The monthly bulletin for February of the Illinois State Board of Health, in an article on "Disinfection after Infection," quotes as follows from an opinion recently handed down by the Supreme Court of Maine:

"Where the public health and human life are concerned, the law requires the highest degree of care. It will not allow of experiments to see if a less degree of care will not answer. . . . No more are those in charge of smallpox patients allowed to experiment to see how little cleansing will answer; how much paper bedaubed with smallpox virus it will do to leave upon the walls of the rooms where the patients have been confined. The law will not tolerate such experiments. It demands the exercise of all possible care. In all cases of doubt, the safest course should be pursued, remembering that it is infinitely better to do too much than to run the risk of doing too little."

This statement, continues the article in question, "might be taken seriously to heart by those sanitarians and health officers who maintain that terminal disinfection is unnecessary, basing their declaration upon the indefensible hypothesis that the majority of the pathogenic organisms speedily die when they leave the patient." Doubtless there is such a thing as wasteful and unnecessary precaution, but even this is better than easy-going negligence.

A GIFT TO COMBAT TUBERCULOSIS. — Report from Chicago announces the gift by James A. Patten, of that city, of the sum of two million dollars to Northwestern University for the establishment of a new chair of experimental medicine, and for the determination and practical application in Illinois of the best methods of controlling, preventing and eradicating tuberculosis. There have been several examples, in recent years, of the devotion of great wealth to the purposes of preventive medicine. It is sincerely to be hoped that in the present instance the results attained may be commensurate with the expectations and generosity of the donor.

LONDON DEATH-RATES IN FEBRUARY. — In the issue of the JOURNAL for Feb. 23 we commented editorially on the death-rate of London for 1909, and for the last four months of 1910. Statistics just published for February, 1911, show the total mortality of that month in London to have been 17.6 per 1,000 inhabitants living. As we noted in our previous editorial, the rates vary widely in the different districts and boroughs. In February, the highest were 27.6 in the old city of London and 24.3 in Shoreditch at the east end; and the lowest, 10.2 in Hampstead and 12.4 in Greenwich, both situated at the periphery of the city.

## BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, April 4, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 45, scarlatina 42, typhoid fever 4, measles 169, smallpox 0, tuberculosis 57.

The death-rate of the reported deaths for the week ending April 4, 1911, was 19.15.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, April 15, 1911, was 243, against 238 the corresponding week of last year, showing an increase of 5 deaths, and making the death-rate for the week, 18.39. Of this number 117 were males and 126 were females; 232 were white and 11 colored; 152 were born in the United States, 85 in foreign countries and 6 unknown; 57 were of American parentage, 149 of foreign parentage and 37 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 40 cases and 2 deaths; scarlatina, 29 cases and 1 death; typhoid fever, 5 cases and 1 death; measles, 186 cases and 2 deaths; tuberculosis, 39 cases and 27 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 33, whooping cough 2, heart disease 24, bronchitis 6. There were 17 deaths from violent causes. The number of children who died under one year was 39; the number under five years, 53. The number of persons who died over sixty years of age was 81. The deaths in public institutions were 104.

Birth-Rate in Lynn. — Vital statistics from Lynn, Mass., for the year 1910, show that during that year there were only one hundred more births in the city than during 1909, the increase of population being largely by immigration. The births were least numerous among native Yankee families.

Protection of Fruits in Lynn. — It is reported from Lynn, Mass., that the local board of health has issued an ordinance requiring all fruit-dealers in that city to provide henceforth suitable covering for all berries and other fruits exposed on their stands, to prevent contamination by dust or flies.

Scarlet Fever in Beverly. — On April 10, two cases of scarlet fever were reported in a tenement house at Beverly, Mass. The house is located in a densely populated part of the city, and to prevent spread of the infection, the entire building, with its twenty-two occupants, has been quarantined by the local board of health.

Needs of the Infants' Hospital. — On the afternoon of next Tuesday, April 25, a bridge tournament is to be held at Hotel Somerset, and in the evening a pop concert for the benefit of the Infants' Hospital. The new building of this institution is now being erected on grounds near the Harvard Medical School, but a considerable sum of money is still needed for its completion, equipment and maintenance.

Connecticut Conference on Charities and Corrections. — The annual Connecticut State Conference on Charities and Corrections will be held at New Haven, Conn., next Monday, April 24. Addresses before this meeting are to be made by President Charles W. Eliot, on "The Social Evil"; by Prof. Irving Fisher, on "Public Health"; by Mr. Charles Hendricks, on "Pollution of Streams and Harbors"; and by Dr. J. H. Kellogg, on "Tendencies towards Race Degeneration."

Massachusetts Homœopathic Medical Society. — The annual meeting and dinner of the Massachusetts Homœopathic Medical Society, held in Boston last week, were attended by about two hundred members and guests. The following officers were elected for the ensuing year: President, Dr. Frank W. Patch, of Framingham; recording secretary, Dr. Edward S. Calderwood, of Roxbury; corresponding secretary, Dr. Benjamin T. Loring, of Boston; treasurer, Dr. Thomas M. Strong, of Boston.

Some Recent Medical Bequests. — The will of the late Sullivan Niles, of Cambridge, Mass., allowed in the Middlesex Probate Court last week, contains a bequest of $3,000 to the Cambridge Hospital for the foundation of a free bed in memory of the testator's son.

Among other bequests in the will of the late Dr. Henry Lyman Shaw, of Boston, filed last week for probate, is one of $200 to the Perkins Institution for the Blind, and three of $100 each to the Massachusetts Medical Benevolent Society, the Boston Medical Library, and the Children's Island Sanatorium at Cat Island, Marblehead, Mass.

Procedures under Pure Food and Drug Laws. — In the municipal court at Boston last week three dealers of this city were sentenced respectively to three months' imprisonment, one month's imprisonment, and a fine of $30 for having in their possession, with intent to sell, a case of rotten eggs and three bags of sugar containing a large amount of sand. They all appealed. Before the same court a Chinese merchant of Boston was arraigned and held in $300 bail on the charge of illegal delivery of opium. Before the United States District Court at Boston, another druggist of this city was fined $150 for

shipping to Philadelphia last July a consignment of "infant syrup" whose content of morphine was not distinctly stated on the label. On the same day, the United States deputy marshal seized at a wharf in Boston, whither it had been sent by a New York firm, a shipment of eight barrels of acid calcium phosphate intended for use as baking powder, but alleged to be adulterated with calcium sulphate and arsenious oxide.

WORK AND PROGRESS OF THE BOSTON DISPENSARY. — In the issue of the JOURNAL for April 6 we published a brief note on the "work and needs of the Boston Dispensary." The recently issued annual report of the Dispensary describes in greater detail the activities of this institution for the year 1910. Of the 40,000 patients treated by the Dispensary during the year, 16,000 were children. Last fall a children's hospital, with 16 beds, was established at 64 Tyler Street in conjunction with the Dispensary. The board of managers has recently appointed, as director of the institution, Mr. Michael M. Davis, Jr., Ph.D., of New York City, a graduate of Columbia University, who has had considerable experience in that city as a settlement worker, social student and publicist. Under his administration, and with increased financial support by the public, the hope is expressed that the Dispensary will be able to continue and extend its admirable work in the service of the community of Boston.

## NEW YORK.

BEQUEST TO THE GERMAN HOSPITAL AND DISPENSARY. — By the will of the late Bernard G. Amend, of New York, one of the heads of the well-known firm of Eimer & Amend, druggists and manufacturing chemists, $2,000 is left to the German Hospital and Dispensary.

BEQUEST TO THE PRESBYTERIAN HOSPITAL. — On April 11, in the New York Supreme Court, under Justice Bischoff, the Presbyterian Hospital won a legacy of $120,000. The jury decided that the will of Edward O. Kindberg, dated Oct. 27, 1908, and leaving the bequest to the hospital, was valid, while a second will of March 25, 1909, omitting the bequest, was invalid because of lack of testamentary capacity.

THORACIC SURGERY AT THE GERMAN HOSPITAL. — The new pavilion for thoracic surgery at the German Hospital was thrown open for inspection on April 8, when Dr. Willy Meyer, the surgeon in charge, explained the very ingenious apparatus. Here is "the latest thing" in chambers for operating under positive and negative air-pressure, and each chamber is placed in an ordinary operating room, so that, if this should for any reason be deemed advisable, an operation can be continued under other methods, the patient remaining on the same table.

SOCIAL SERVICE AT THE NEW YORK DISPENSARY. — The New York Dispensary, the oldest in the city, which since its establishment in 1790 has given medical and surgical aid to more than three million patients, has recently organized a Social Service Department. In common with other workers in a similar field, the trustees have recognized the futility of effecting a cure and then returning the patient to the same conditions that produced his illness. This department makes hospital treatment, where necessary, possible for a wage-earner by seeing that through established agencies his family is cared for in his absence, perhaps finds more healthful employment for him, and otherwise renders him friendly aid. In consequence of the increased expenditure which all this involves, the dispensary has felt constrained to make a special appeal for contributions.

LINES TO A TYPHOID FLY. — According to a writer in the New York *Times*, the ghost of the author of the well-known "Lines to a Fly," after seeing the moving pictures with which Prof. Frederic S. Lee, of Columbia University, illustrated one of the lectures in his recent popular course on Modern Medicine at the American Museum of Natural History, was moved to make alterations in them as follows:

Most injurious typhoid fly,
Drink with you no more will I.
When you settle on my cup,
I, perchance, bacteria sup.
After what I've seen to-day,
I would have you chased away.

I dislike those feet of thine;
What they've touched I shall decline.
Carrier of germ and spore,
Get thee hence! Return no more!
Spreader of disease, begone!
Kindly leave my food alone.

MORTALITY STATISTICS FOR MARCH. — The weekly reports of the Health Department show that during the month of March the mortality in the city represented an annual death-rate of 17.73, as against 16.60 in February and 17.69 in March, 1910. Among the diseases in which there was an

augmented fatality were the following: The weekly average of deaths from measles increased from 14.5 in February to 17.5 in March; the weekly average from scarlet fever, from 20.5 to 29; from diphtheria and croup, from 31 to 35.5; from pneumonia, from 158 to 166.25; from bronchopneumonia, from 117.75 to 146.75; from diarrheal diseases, from 49.25 to 64.75; from diarrheals under five years of age, from 44 to 62; from cirrhosis of the liver, from 22.25 to 29.25; from Bright's disease and acute nephritis, from 118.75 to 128; and from puerperal diseases, including septicemia, from 14.75 to 16.75. Among the diseases in which there was a diminished mortality were the following: The weekly average of deaths from influenza declined from 24.25 to 16.25; from pulmonary tuberculosis, from 193.5 to 182.75; from apoplexy and softening of the brain, from 28.5 to 24.75; from organic heart diseases, from 182.75 to 165.25; from appendicitis and typhlitis, from 12.25 to 10; and from hernia, intestinal obstruction, from 12.75 to 9.5. During the month there were six deaths from malarial fevers, while in February not a single death was recorded from this cause. The corrected death-rate, excluding non-residents and infants under one week old, was 16.77.

## Current Literature.

### Medical Record.

April 8, 1911.

1. Berg, H. W. *Posture as an Aid in the Diagnosis and Treatment of Cardiac Affections and Dropsical Conditions of Various Origin.*
2. Terry, B. T. *The Chemotherapy of Ehrlich, with Special Reference to the Trypanosome Infections.*
3. Woodruff, C. E. *Death-Rates in the Japanese War.*
4. Brill, N. E. *A Case of Erythremia with Unusual Features.*
5. Morgan, J. D. *Psychoses of Childbearing.*
6. Robinson, W. J. *Acute Urethritis of Chemical Origin, with Report of Three Cases.*
7. Kahn A. *Removal of the Septal Floor in Submucous Operations.*

### The Journal of the American Medical Association.

April 8, 1911.

1. Ferguson, A. H. *The Evolutionary Spirit for Betterment in Medical Education.*
2. Fletcher, J. P. *A Safe and Rapid Method for the Administration of Antityphoid Vaccine.*
3. *Fry, R. H. *The Prevention of Industrial Phosphorous Poisoning.*
4. Castle, H. E., and Rypkogel, H. A. L. *An Efficient and Time-Saving Method of Tying the Square Knot.*
5. *Mayo, W. J. *Innocent Gallstones a Myth.*
6. Strosnider, C. F. *Hookworm Disease, Prevalence, Harmful Results and Treatment.*
7. Wood, H. B. *Sanitary Consideration of Health Resorts.*
8. Seymour, M. *Trichiniasis in Italians Following the Eating of Raw Ham.*
9. Berry, J. McW. *Treatment of Paralysis Following Acute Poliomyelitis.*
10. Foulkrod, C. *Two Cases of Cæsarean Section with Unusual Complications.*

3. Fry states that facts point to a local infection of the jaw bone by phosphorus through diseased teeth as the essential factor in necrosis in phosphorus poisoning. From the observation of 177 persons for from six months to two and one-half years it seems evident that the measures in operation at the present time are effectual in the prevention of necrosis in persons employed in the manufacture of matches from white phosphorus and that the substitution of other less satisfactory materials is unnecessary. These methods consist chiefly in trying as far as possible to exclude from phosphorus factories persons with decayed teeth, in the rigid frequent inspection of those employed and the requiring all defects of teeth to be treated thoroughly as soon as discovered. The method is a prophylactic one and is very successful, as shown by the fact that out of 177 cases observed over a period of two and a half years, only 8 cases of necrosis have developed.

5. Mayo emphasizes very strongly why gallstones should never be looked upon as innocent but should always be removed when known or suspected to exist. Early operation is relatively safe and the gall bladder may be saved for future function. Simple operation for uncomplicated gallstones has a mortality of less than 0.5%, and this mortality, even, is due to the condition of the patient rather than to the operation. Mayo, in his series, has found complications in more than two thirds of his cases. Carcinoma was associated with gallstones in 85 cases (2.25%). Gallstone disease sometimes causes serious circulatory disturbances. Endocarditis is sometimes coincident with a gallstone attack and each exacerbation of the gallstone disease is accompanied by an increase of cardiac symptoms, which can be relieved to some extent by relief of the gallstone disease. Quiescent gallstones often become active during pregnancy. Some women can identify gallstone attacks with certain pregnancies. Eighty-six per cent of all diseases of the pancreas seen by Mayo at operation were complicated by gallstones. Seven per cent of all patients with gallstones in the gall bladder operated on have had pancreatitis in some form, and in 27% of cases of stone in the common duct marked pancreatitis was present. Pancreatic complications were four times more frequent in cases of common duct stones than in cases in which stones were still in the gall bladder. The function of the gall bladder does not seem to be a storehouse for bile since as much bile is secreted in twenty-four hours as there is urine, but it probably acts to take the pressure off the common and hepatic ducts as shown by their marked distention and dilatation after removal of the gall bladder. There is every reason why one should operate early for gallstones and preserve the gall bladder as often as possible. [E. H. R.]

### The Archives of Internal Medicine.

March, 1911.

1. Thayer, W. S., and Peabody, F. W. *A Study of Two Cases of Adams-Stokes' Syndrome with Heart-Block.*
2. Egdahl, A. *A Case of Poisoning Due to Eating Poison-Hemlock (Cicuta Maculata), with a Review of Reported Cases.*
3. Pettit, R. T. *The Opsonic Index in the Diagnosis of Mixed Infection in Pulmonary Tuberculosis.*
4. Craig, C. F. *Entameba Tetragena as a Cause of Dysentery in the Philippine Islands.*
5. *Hart, J. S. *The Acidosis Index; A Clinical Measure of the Degree of Acidosis.*
6. Novak, E., and Whitney, E. L. *Acute Yellow Atrophy of the Liver; Report of Two Cases.*
7. Von Pirquet, C. E. *Allergy.*

5. Hart proposes a simple method for estimating the degree of acidosis in diabetes and other conditions. The method depends upon the intensity of color developed by adding ferric chloride to urine containing the acetone bodies. Two solutions are necessary: (1) The "standard solution," consisting of ethyl acetate 1 ccm., alcohol 25 ccm., water 1,000 ccm.; and (2) ferric chloride solution, consisting of 100 gm. ferric chloride dissolved in 100 ccm. water. The technic is as follows: Take two test-tubes of equal caliber, put in one 10 ccm. of the "standard solution" and in the other 10 ccm. urine, add to each

1 ccm. ferric chloride solution, allow the tubes to stand two minutes and then compare the color. Dilute the urine until the colors match, noting the volume to which it has been necessary to do so. By this means we obtain the "acidosis index per liter" in accordance with the following schedule:

Volume of urine, 10 ccm. Index per liter, 1.

Volume of urine, 20 ccm. Index per liter, 2, etc.

In order to ascertain the "acidosis index" proper, multiply the index per liter by the number of liters of urine passed in twenty-four hours. In support of this "index" the author presents tables comparing results obtained by this and other methods in forty-one cases of acidosis. He claims for it the value of a simple and quick means of following the daily fluctuations of organic acid excretion. [L. D. C.]

## ANNALS OF SURGERY.

### MARCH, 1911.

1. BROWN, W. H. *Parathyroid Implantation in the Treatment of Tetania Parathyreopriva.*
2. EASTMAN, J. R. *Gastrotomy as a Curative Measure per se in Non-Malignant Strictures of the Œsophagus.*
3. *BREWSTER, G. W. W., AND ROBINSON, S. *Operative Treatment of Wounds of the Heart.*
4. *LONG, J. W. *The Importance of Preserving the Gall Bladder in Operations upon the Gall Passages.*
5. MAKINS, G. H. *Retroperitoneal and Mesenteric Cysts of a Simple Nature.*
6. KELLY, H. A. *The Abdominal Incision — the Removal of the Wedge of Skin and Fat to Facilitate Intra-Abdominal Operations.*
7. *COBB, F., AND GIDDINGS, H. G. *Supernumerary Kidney Subject of Cystadenoma.*
8. *MOORE, J. E., AND CORBETT, J. F. *The Damage done to the Kidney by Operation.*
9. FOWLER, H. A. *Empyema of the Ureter.*
10. SINCLAIR, H. H. *The Control of Urinary Drainage after Cystotomy.*
11. *ALEXANDER, S. *The Technic of Median Perineal Prostatectomy.*
12. HIBBS, R. A. *An Operation for Stiffening the Knee-joint.*
13. WATTS, S. H. *Intussusception in the Adult.*

3. Brewster and Robinson report a case of bullet wound of the heart and review the literature on wounds of the heart. They find 177 reported cases of heart wounds, 71 successfully sutured and 106 operated with fatal result. Of these cases only 24 were bullet wounds (including their own), with recovery of 11 and death of 13. These 24 cases are carefully tabulated. Their own case is described in detail (symptoms, examination, operation and post-mortem). The bullet had apparently pierced the fifth left rib near nipple line, entered pericardium, traversed cavity of left ventricle, penetrated diaphragm, then passed through left lobe of liver, again through diaphragm, penetrating lower lobe of left lung and becoming imbedded in intercostal muscles at back. They advocate long intercostal incision under differential pressure with spreading of the ribs. In regard to drainage they believe it wiser to suture the pericardium tightly. Subsequent aspiration may be performed, if pericarditis ensues.

4. Long makes a plea for the preservation of the gall bladder. He argues that (1) many cases upon which cholecystectomy is frequently done do equally well with simple cholecystostomy, (2) the mucus secreted by the gall bladder reduces the toxicity of the bile, and (3) cholecystenterostomy is at present the only means of dealing with chronic pancreatitis. The frequency of pancreatitis in common duct cases (24%, Mayo) persuades Long not to sacrifice the gall bladder unnecessarily.

7. Cobb and Giddings report a case of cystadenoma arising from a supernumerary kidney, which grossly as well as microscopically resembled a normal one, i. e., was fully developed with its own blood supply, but without a ureter. The patient is in excellent health one and one-half years after removal. Seven cases of supernumerary kidney are collected from the literature.

8. Moore and Corbett have used rabbits to determine the amount of kidney destruction following various methods of suturing the split kidney. Simple suture of the capsule proved unsafe on account of hemorrhage. Mattress sutures caused tissue destruction far beyond the field of operation and enlargement of the unoperated kidney. This enlargement was due to simple congestion and not to increase in kidney tissue. This method, therefore, reduces the sum total of kidney substance. Interrupted deep sutures transfixing the kidney at the pyramidal line and tied around the body of the kidney did the least damage. The authors recommend this type of suture. Photomicrographs are given.

11. Alexander considers various phases of the subject, line of cleavage, relation of base of prostate and bladder, middle lobe, control of hemorrhage, bladder drainage and general post-operative treatment. The technic of operation is given in detail, with numerous hints for contending with the unexpected. [T. W. H.]

## THE LANCET.

### MARCH 11, 1911.

1. *GOADBY, V. W. *The Hunterian Lecture on the Association of Disease of the Mouth with Rheumatoid Arthritis and Certain Other Forms of Rheumatism.*
2. HASLAM, W. F. *Lettsomian Lectures on Operation for Stone in the Male Bladder. Lecture III.*
3. LANE, W. A. *The Principles on which the Treatment of Resting Conditions of the Skeleton is Based.*
4. YEARSLEY, M. *The Education of the Deaf; its Present Status in England, with Suggestions as to its Future Modifications and Development. III.*
5. *HARRIS, A. *Notes on the Duration of Infectivity of Enteric Fever as Illustrated by Repeated Bacteriological Examination of Twenty-seven Cases.*
6. VON OFENHEIM, E. *Sporotrichosis.*
7. CHURCHWARD, A. *Treatment of Rodent Ulcer by Calcio-Phosphate of Uranium.*
8. WRIGHT, E. A. *An Unusual Case of Intestinal Obstruction.*
9. BRACHI, F., AND CARR, J. W. *Infantile Scurvy in a Child Fed on Sterilized Milk.*
10. SINGER, C. *A Forgotten Prophecy of the Microbic Theory of Infectious Disease.*
11. BENTHALL, A. *The Question of Compulsory State Insurance of Employers' Liability under the Workmen's Compensation Act, 1906.*

1. Goadby adds an interesting contribution to the work already done on chronic infectious joint disease, and the mouth as portal of entry for the infecting organisms. He briefly classifies those joint diseases, which he considers of infectious origin, especially the rheumatoid group. He then summarizes the clinical evidence tending to show that there is a connection between pyorrhea alveolaris and such joint lesions, and reviews the work on the bacteriology of the subject by Fayerweather, Painter, Poynton, *et al.* He describes the morphology and cultural characteristics of the organisms found and the results of many inoculation experiments on animals as to joint lesions produced by these organisms. He describes the results of treatment by autogenous vaccines, and strict attention to the local mouth condition.

5. Harris has made a careful bacteriological study of the feces of twenty-seven typhoid patients and from his researches concludes that typhoid carriers cannot be such a large factor in spreading the disease as was thought possible when one considers the comparatively large numbers of typhoid patients discharged who undoubtedly have active typhoid bacilli in their stools. [J. B. H.]

### MARCH 18, 1911.

1. *BOYCOTT A. E. *The Milroy Lectures on Ankylostoma Infection. Lecture I.*
2. KEITH, A. *Hunterian Lectures on the Anthropology of Ancient British Races.*
3. MCINTOSH, J., AND FILDER, P. *"606" and Syphilis; a Reply to Mr. C. F. Marshall's Views.*
4. *GIBBARD, T. W., AND HARRISON, L. W. *Observations on the Use of Salvarsan in Syphilis.*
5. HALL, I. W., AND WILLIAMSON, G. S. *The Diagnosis of Gastric Carcinoma by the Cleavage of Polypeptides.*
6. TURNER, P., AND CATTO, H. C. *The Iodine Method of Sterilizing the Skin.*
7. SELIGMAN, C. G. *An Egyptian Holy Man.*

1. In the first of the Milroy Lectures, Boycott describes the life history of the ankylostoma and the modes of infection with special reference to skin infection. He devotes special attention to the duration of infectivity; this may last four to six years after the original infection. He discusses at length the pathology of ankylostoma anemia; this seems to consist of an apparent decrease in hemoglobin but a real increase in the total blood mass, which accounts to a large extent for the apparent deficiency in hemoglobin. The color index is low and morphological changes slight. The exact cause of the anemia is not known; it is probably due to a destructive action on the blood by the worms themselves.

4. Gibbard and Harrison add one more article to the long list of those dwelling on experiences with "606," its method of administration and results obtained from its use. [J. B. H.]

BRITISH MEDICAL JOURNAL.

MARCH 18, 1911.

1. SAUNDBY, R. *An Address on Aphasia.*
2. HINSHELWOOD, J. *Two Cases of Hereditary Congenital Word-Blindness.*
3. *PARKER, G. *An Epidemic of Infantile Paralysis in Bristol.*
4. *VIPOND, A. E. *Etiology of Poliomyelitis.*
5. *VERDON, H. W. *The Gastric Origin of Angina Pectoris.*
6. GOULSTON, A. *A Note on the Beneficial Effect of the Ingestion of Cane Sugar in Certain Forms of Heart Disease.*
7. CYRIAX, E. F. *Mechano-Therapeutics in the Treatment of Chronic Constipation.*
8. *EVANS, A. *The Treatment of Syphilis by Salvarsan. Observations upon Forty-four Cases.*
9. ABSTON, H. *The Curative Effect of Salvarsan in Frambesia.*

THE SCIENCE COMMITTEE OF THE BRITISH MEDICAL ASSOCIATION.

10. BOLTON, C., AND GRAY, A. M. H. *Observations on the Occurrence of Fluid in the Abdominal Cavity in Pregnant Rabbits.*
11. COOMBS, C. *The Histology of Rheumatic Carditis and Other Rheumatic Phenomena.*
12. NICOLL, W. *The Rat Flea as the Intermediate Host of a Rat Tapeworm.*

3. Parker describes an epidemic of 37 cases of infantile paralysis in Bristol, England, from June, 1909, to January, 1910, and compares it with other epidemics here and elsewhere.

4. Vipond discusses the etiology of poliomyelitis, with particular reference to its similarity to typhoid fever. Both diseases occur in the late summer or fall months; cold weather causes both diseases to disappear; the incubation periods of each disease are the same and the Widal reaction is often positive in poliomyelitis. His observations are interesting, but not conclusive.

5. Verdon believes that the attack of angina pectoris is due to gastric distention causing pressure on branches of the sympathetic system going to the heart. He cites many cases where attacks of angina seemed to be of gastric origin and were relieved by belching of gas; from statistics he believes it to be proved that coronary sclerosis has nothing to do with causing the attacks of angina, though the consequent weakened condition of the heart indirectly may lead to death in these cases. Coronary sclerosis, thrombus and embolism, he considers to be the result rather than the cause of angina pectoris.

8. Evans comments upon the results of forty-four cases of syphilis treated with "salvarsan." [J. B. H.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 10.

MARCH 9, 1911.

1. SCHULTZE, E. *The Diagnosis and Treatment of Multiple Sclerosis in its Early Stages.* (Conclusion.)
2. SCHMIDT, A. *Vegetable Digestion in Health and Sickness and the Comminuting Function of the Stomach.*
3. *BETHMANN. *Early Cutaneous Recurrence of Syphilis after Treatment with Salvarsan.*
4. *HERXHEIMER, K., AND ALTMANN, K. *A Reaction of Tuberculous Processes after Salvarsan Injection.*
5. SCHOBER, P. *The Technic of Salvarsan Injections.*
6. HESSE, E. *Iodival in the Treatment of Syphilis.*
7. SICHEL, M. *The Psychopathology of Suicide.*
8. RADONICIC, K. *The Clinical Picture of Chronic Fibrous Mediastinitis, with Contributions on Mediastino-Pericarditis and Adherent Pericardium.*
9. COHN, S. *Experimental Contributions to the Pathogenesis and Treatment of Gout.*
10. HÖRDER, A. *Reflex Anuria from Sudden Cooling.*
11. SPIEGEL, L. *The Chemical Composition of Hydropyrin.*
12. GOÜTER, R. *Stable Hydrogen Peroxide and Pergenol.*

3. In the literature now are beginning to appear answers to the question that was so frequent, namely, Will the symptoms of syphilis return after a while following treatment with salvarsan alone? Bettmann in this article reports recurrences which have occurred under his observation. In some cases the character of the skin lesion is quite characteristic.

4. These authors have found in nine cases with tuberculosis of the lungs, skin or glands a distinct cellular reaction at the site of the tubercular process after an injection with salvarsan. They could not detect any helpful effects from this reaction, but think that it suggests the possibility of a therapeutic influence. [C. F., JR.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 11.

MARCH 14, 1911.

1. *WERNER, R., AND COAN, A. *Applicability of the X-Rays Directly for Treatment of Intra-Abdominal Organs.*
2. *SCHOTTMÜLLER, H. *Etiology of Febris Puerperalis and Febris in Puerperio.*
3. ROLLY, F. *Paratyphoid Infections.* (To be concluded.)
4. SCHMIDT, P. *The Question of the Ubiquity of B. Paratyphoid Bacilli.*
5. *NEU, M. *The Pharmacology and Clinical Value of Tonics for the Uterus.*
6. EDLING, L. *The Use of the X-Ray in the Diagnosis of Pregnancy.* (Preliminary communication.)
7. SIESKIND, R. *The Behavior of the Blood Pressure during Intravenous Injection of Salvarsan.*
8. KLAUSNER, E. *Jaundice after Salvarsan.*
9. PÜRCKHAUER, R. *Torsion of the Bones of the Lower Leg in Congenital Club-Foot and Its Cure.*
10. WINCKEL, M. *The Value of Fresh Digitalis Leaves and Their Preservation.*
11. EHLERS, H. *A New Preparation of Digitalis.* (*Dig. Winchel.*)
12. STUMPF, J. *The Bolus Bandage, a New Strip Dressing for Wounds.*
13. WOLFF, H. *Transplantation of Finger and Toe-Bones.*
14. HANNES, W. *Eclampsia.*
15. KOWARSCHIK, J. *A New Four-Celled Bath-Controller.*
16. SCHRÖDER. *The Clinical Picture of the Plague in Thucydides.*

1. The writers have tried Carl Beck's method of stitching malignant tumors to an open wound and treating them directly with the Röntgen rays. They have reached the conclusions that by this procedure the tumor may be treated with better results, that the danger of burns to the skin and injury of other organs by the rays may be avoided, that the general condition may be improved and the comfort of the patient promoted.

2. Schottmüller in earlier work stated that the hemolytic streptococcus of erysipelas was found in puerperal fever. He now adds that the anaërobic streptococcus putridus is equally common and that the staphylococcus aureus, the B. coli and the B. phlegmonis emphysematosæ are far less important.

5. Neu says that for post-partum hemorrhage there is no better drug than suprarenin. It acts on the muscles of the uterus independently of its effect on blood-pressure. It produces tetanic contractions of the uterus and increases its muscular tone and irritability for a considerable time afterwards. He has used intramuscular and subcutaneous injections to induce labor, to increase the strength of labor-pains and to stop hemorrhage. Pituitin has an entirely similar but weaker action. [G. C. S.]

BERLINER KLINISCHE WOCHENSCHRIFT. No. 11.

MARCH 13, 1911.

1. *GÉRONNE, A., AND GUTMANN, C. *The Question of the Action of Salvarsan on the Nervous System.*
2. *ISAAC, H., SENATOR, M., AND BENDA, C. *A Case of Leprosy Treated with Salvarsan.*
3. GENNERICH. *Use of Collargol and Electrargol on the Sequelæ of Gonorrhea.*
4. SEEGALL, G. *Experiences with Albargin in Practice.*
5. EHRINGHAUS, O. *A Point of Predeliction for Spontaneous Fractures in Tuberculous Coxitis.*
6. NICOL, K. *A Cured Case of Ichorous Pyopneumothorax due to Swallowing a Piece from a Set of False Teeth.*
7. ARON, E. *Modification of the Method of J. Holmgren of Blowing out instead of Aspirating Pleural Effusions.*

1. The authors, in a long and thorough paper on this subject, illustrated by many case histories, cover not only the action of the drug on the nervous tissue, but also in a general way the whole question of the lesions produced by the disease itself when it involves nervous tissue.

2. The authors confirm the results of other observers that the drug has no effect on the disease itself, or on the lepra bacillus. [J. L. H.]

WIENER KLINISCHE WOCHENSCHRIFT. No. 2.

JAN. 12, 1911.

1. *NEURATH, R. *Fat Children; Hypophyseal and Eunuchoid Adiposity in Childhood.*
2. TANAKA, Y. *The Knowledge of Pulmonary Distomiasis.*
3. PICHLER, A. *The Causes of Sparkling Skotoma, and Its Treatment.*
4. DENK, W. *The Question of Circumscribed, Chronic Adhesive Peritonitis.*
5. BYCHOWSKI, Z. *The Differential Diagnosis of Hysteria and Allied Organic Nerve Diseases.*
6. FINGER, E. *Observations on the Ehrlich Debate.*
7. TELEKY, L. *A Journey to a Congress of Social Medicine.* (Conclusion.)

1. The author presents an interesting discussion, based on three cases of personal experience, of the symptom-complex of excessive adiposity and sexual underdevelopment in children, associated with hypopituitarism, and occasionally with epileptic or epileptiform seizures. [R. M. G.]

DIE THERAPIE DER GEGENWART.

MARCH, 1911.

1. WEINTRAUD, W. *The Treatment of Gout with Phenylchinolin-Carbonic Acid (Atophan) with Remarks on the Dietetic Treatment of the Disease.*
2. MÜLLER, C. *The Outlook for the Treatment of Malignant Tumors with Röntgen Rays.*
3. KLEMPERER, G. *An After-Word.*
4. EVERLING. *Two Cases of Tetanus Treated with Large Doses of Antitoxin.*
5. WIDMER, C. *The Climatic Treatment of Hay Fever and the So-Called Nervous Asthmas.*
6. JACOBSOHN, L., AND REWALD, B. *Rectal Feeding by Means of Slow Infusions of Sugar Solution, Alcohol, and Amido-Acids.*
7. JACOBSOHN, L. *The Fundamental Principles of Psychology and Psychotherapy.*

REVUE DE CHIRURGIE.

MARCH, 1911.

1. *BROCA, A., AND ROLAND, E. *Treatment of Papillomata of the Larynx in the Child.*
2. *BÉJAN, J., AND COHN, M. *Experimental Study on Ligature of the Inferior Vena Cava.*
3. CHAVANNAZ, G., AND NADAL, P. *Mixed Tumors of the Thyroid Body.*
4. *COTTE, G., AND ARNAUD, L. *Treatment of Biliary Perforations into the Free Peritoneum in the Course of Lithiasis.*

1. From a theoretical discussion, the authors conclude that there is no satisfactory treatment for papilloma of the larynx in children. They consider extraction by the natural route, under control of the mirror, as the operation of choice, but recommend tracheotomy at any time in the event of dyspnea. When such extraction is impossible, they advocate thyrotomy or thyrostomy. Stricture of the larynx should be treated by laryngostomy.

2. After reviewing the work of Purpura, of Gosset and Lecène, and of Liotta in experimental ligation of the inferior cava in animals, the writers report the results of their own series of twenty such similar procedures, with the following conclusions: (*a*) Life is possible and compatible with full health after ligature of the inferior cava at any point below the renal veins. (*b*) Ligature of the inferior cava including one of the renal veins is well tolerated. The circulation of the involved kidney is readily established through the veins at its superior pole by anastomosis with the corresponding suprarenal vein, the abdominal parietes and the diaphragm. (*c*) Ligature immediately above the renal veins and involving the left suprarenal is equally compatible with life. The circulation is re-established by the venous plexus at the superior pole of each kidney, and thence by the suprarenal directly with the vena cava on the right, and on the left by anastomoses of this vein with the diaphragmatic veins, the abdominal parietes, the lumbar, azygos and spinal veins. (*d*) Ligature above the right suprarenal is always fatal.

4. Cotte and Arnaud collect from the literature 76 operated cases of biliary perforation into the peritoneal cavity during lithiasis, and in a comparative study of these, discuss the chemical and anatomic data, the therapeutic indications, and the results of surgical intervention. Of the cases in this series 42 died and 34 recovered. In simple cases, they advocate merely drainage; in cases complicated by grave infection, cholecystectomy and drainage. [R. M. G.]

IL POLICLINICO.

MARCH, 1911.

MEDICAL SECTION.

1. ALESSANDRINI, P. *Experiments on the Mechanism of Hemolysis from Cobra Venom, with a Consideration of Its Diagnostic Value.*
2. *PONTANO, T. *Activation of Cobra Venom by Means of the Sera of the Tuberculous.*
3. TOMASELLI, A. *A Contribution to the Study of the Pathological Anatomy of Malta Fever.*
4. ANTONELLI, G. *Icterus Gravis with Demonstration of Bacillus Paratyphosus Beta in the Blood and the Spleen.*

2. Pontano reports an exhaustive clinical study of the so-called cobra reaction of blood serum. He finds that the property of activating cobra venom belongs to the sera of persons suffering from tuberculosis and other diseases. It is not especially characteristic of tuberculosis either febrile or afebrile and is far inferior to the ophthalmic and cutaneous tuberculin tests. The activating substance (probably lecithin) cannot be demonstrated any more often in the sera of tuberculous cases than in that of various other diseases. The cobra reaction should, therefore, be discarded as a diagnostic test for tuberculosis. [L. D. C.]

SURGICAL SECTION.

1. GANGITANO, F. *The Effects of Chlorophlebonarcosis on the Blood.*
2. POGGIOLINI, A. *The Morphologic Modifications of the Blood in Narcosis with Ether and with Chloroform.*
3. BARNABÒ, V. *Contribution to the Study of Fractures of the Costal Cartilages.*
4. FICHERA, G. *Recent Contributions to the Doctrine of Neoplasms.*

## Obituaries.

### EDWARD FITCH CUSHING, M.D.

DR. EDWARD F. CUSHING, of Cleveland, a distinguished graduate of the Harvard Medical School, died on March 23, from a malignant

obstruction of the colon. He was in his forty-ninth year. Dr. Cushing's acute illness lasted but a few days; indeed, he was busy about his work up to a week before his death. A sudden and unexpected intestinal obstruction overtook him. It was relieved by operative anastomosis, but he did not rally and succumbed shortly to a double pneumonia.

Dr. Cushing's death brings upon our profession a serious loss, — and in more than the conventional sense. He was a man of rare attainments, untiring, devoted, courageous. At a largely attended citizens' meeting held in his memory at the Lakeside Hospital, on March 26, a prominent layman called him the most eminent citizen of Cleveland. There were remarkable qualities in the character and career of Dr. Cushing which justify this eulogy. His was one of the brilliant minds of our profession, — acute, observant, retentive. His student contemporaries will not forget his astonishing comprehension, his lucid explanations, his practical applications and his unfailing resourcefulness. He was an omniverous reader and a profound scholar. He ranged widely through our literature, and stored great information, ready for instant and practical use. He was highly trained. After completing a brilliant service as house-surgeon at the Massachusetts General Hospital he received an appointment to the medical service in the same institution, where his work was equally effective. He served as house-physician to the Boston Lying-In Hospital also, and spent time in Europe studying diseases of children. In such fashion was he equipped for his career.

Unlike many other men of fine mind and high attainments, Dr. Cushing was modest for himself and keenly appreciative of the opinions and work of others. He listened to, and assimilated, the views of his colleagues. His intellectual and practical charity were constant and unfailing. He thought no evil. He assumed fair play in others even as he himself practiced honorable dealing. He encouraged effort, though it might come to small ends; and he applauded eagerly every sane, forward, progressive and honest endeavor which might lead to the betterment of medicine.

Throughout his professional life he gave himself to the welfare of the community in which he lived, — without thought for the wider fame which might easily have been his, — but earnestly, faithfully, constantly, for twenty years he devoted his great talents to Cleveland and his native state of Ohio. He accomplished much; his fellow-citizens loved, respected and trusted him; and so he came to hold with them a place almost unique among modern physicians. We all know and respect the highest type of family doctor, — the faithful, devoted friend, the wise counsellor, the sound adviser. Dr. Cushing filled this place in a perfect degree, but he brought to the service those great qualities of brain, as well as of heart, whose loss is mourned by his people.

The outline facts of Dr. Cushing's life appear simple and are soon told: He came of a distinguished line of physicians. His great-grandfather was a physician in New England; his grandfather, Erastus Cushing, was a pioneer and one of the early physicians of Cleveland; his father, Henry Kirke Cushing, a surgeon of the Civil War, practiced medicine in Cleveland almost to the time of his death at the age of eighty-three, less than two years ago. Harvey Cushing, of Johns Hopkins and Harvard, is Edward Cushing's younger brother.

Edward Fitch Cushing was born in Cleveland in 1862; was graduated A.B. from Cornell in 1883 and M.D. from Harvard in 1888. After completing his post-graduate studies he began practice in his native town in 1891, when his father was still active. In the course of years the son took over the father's work. The younger Cushing soon made himself felt in the community. Important assignments were given him, and he created new enterprises. He was visiting physician to the Lakeside Hospital; he fostered the *Cleveland Medical Journal*, which owes much of its success to his leading and his money; he promoted and established the Babies' Dispensary, a splendid work; he was foremost in organizing the Cleveland Medical Library, and in reorganizing the prosperous and distinguished Western Reserve Medical College. In all questions relating to public health his advice was sought and was liberally given. He was a vice-president of the Harvard Medical Alumni Association. Such were a few of his many activities. His life was one of service. He was an ideal clinician, perhaps there was no greater in this country. And with all this, his was a life of self-abnegation. Rarely in this modern world do we see great talents so consecrated to plain duty. We have our professional leaders, our great martyrs to science, our widely heralded surgeons, our Walter Reeds, our heroes of the laboratory; Edward Cushing might have ranked them all, but he chose what seemed a humbler field, — to give himself unreservedly, faithfully, brilliantly to the daily service of the sick. He set a standard which may well be an inspiration and an example to every practitioner, humble or famous, in the land; and in the short space of twenty years he accomplished a work and gained a loyal devotion in a great community which may not hope to see his like again.

## JAMES BELL, M.D.

Dr. James Bell, who died last week at Montreal, Canada, was born in North Gower, Carleton, Ontario, on Oct. 10, 1852. He studied medicine at McGill University, from which he graduated in 1877. During the same year he served as house surgeon of the Montreal General Hospital. In 1881 he was made medical superintendent of that institution, in 1885 he was appointed to its staff as assistant surgeon, and became visiting surgeon in 1886. He served for some years as surgeon to the Sixth Battalion of Fusiliers, and in

1885, during the Northwest Rebellion, did active duty in the field as surgeon major in charge of the hospital corps. In 1888 he was made associate professor of clinical surgery at the McGill Medical School. In 1894 he became professor of clinical surgery and was appointed surgeon-in-chief to the Royal Victoria Hospital and consulting surgeon to the Montreal General Hospital. He was descended from a famous Scotch family of physicians, and was himself distinguished as a teacher and practitioner.

## Miscellany.

### DIFFUSION OF UNIFORM PUBLIC HEALTH METHODS.

IN last week's issue of the JOURNAL we noted the intention of the Bureau of the United States Public Health and Marine-Hospital Service to print from time to time in its weekly reports local municipal ordinances, rules and regulations pertaining to public hygiene, "in order to make them easily accessible for study or imitation by health officials in other communities throughout the country." The public health reports of the Bureau for March 31 and April 7 contain the first instalments of these local ordinances, including regulations from New Bedford, Mass., and New Haven, Conn., relative to poliomyelitis; from Lynn, Mass., relative to the temperature and bacterial content of milk; from Fall River, Mass., relative to milk and to school inspection; from Providence, R. I., relative to the protection of foodstuffs in markets; from Camden, N. J., relative to spitting in public places; and from Minneapolis, Minn., relative to regulation and inspection of hotels, restaurants and boarding-houses. These reprints should afford excellent and valuable means for the comparative study of methods of dealing with the problems of public health and should lead to greater administrative uniformity by the diffusion and general adoption of those methods which in a given community have proved successful and advantageous.

### AMERICAN PHYSICAL EDUCATION ASSOCIATION.

THE annual convention of the American Physical Education Association was held in Boston last week on the four days from Tuesday, April 11, to Friday, April 14, inclusive. On Wednesday evening, April 12, there was a joint meeting of the Association and of the Public School Physical Training Society of Boston; and on Thursday, April 13, the Association was entertained at the Harvard Medical School by the Massachusetts Medical Gymnastic Society. At the various sessions of the convention numerous interesting papers were presented, among others one by Dr. Edward H. Bradford, of Boston, on "Physical Training in the Correction of Scoliosis"; one on "Age," by Dr. Charles S. Minot, of Boston; and one by Dr. George L. Meylan, president of the Association, on "Physical Training in Europe." Addresses were also made by Dr. Thomas F. Harrington, of Boston, and by Dr. C. Ward Crampton, director of physical training in the public schools of New York City. Dr. Dudley A. Sargent, of Cambridge, and Prof. John M. Tyler, of Amherst, discussed "The Physical Education of Girls and Women." Dr. E. A. Peterson, of Cleveland, Ohio, emphasized the importance of the element of play in all physical training. The spontaneous exercise of children and of men is by means of games; many of the serious affairs of life are pursued in the spirit of game; and without this spirit, gymnastic training loses much not only of its educational value, but of its physical benefit.

### INTERPRETATION OF PURE DRUG LAW.

IN the issue of the JOURNAL for April 6 we noted the filing of a demurrer by a certain firm against charges brought against it under the pure drug law. This demurrer is based on a decision recently rendered in the case of Dr. O. A. Johnson by a District Court in Missouri. The indictment in the latter case was quashed on the ground that the pure drugs act does not apply to false statements about the curative properties of medicines, but only to false statements regarding their ingredients. An appeal from this decision is now being argued before the United States Supreme Court at Washington, D. C. Dr. Johnson's counsel contends that if the law be interpreted as forbidding statements about the curative properties of drugs, the act is unconstitutional, since such statements are intended not as statements of fact, but as forecasts of probability. On the other hand, the solicitor-general maintains that the law is constitutional and was intended by Congress to forbid such statements about the supposed remedial virtues of any medicine as would be likely to mislead purchasers into an unjustifiable confidence in its efficacy.

### THE STRASSBURG MUNICIPAL DENTAL CLINIC.

IT is reported from Strassburg, Germany, that during the current month of April, the municipal dental clinic of that city will be for the first time established in new and adequate quarters in connection with the local medicinal baths. This clinic, which was established in 1888, was one of the first in the world to afford free dental examination and treatment to public school children. The work done at Strassburg was imitated in other cities in Germany and throughout the civilized world, as the importance of dental care and oral hygiene, especially in childhood, and its bearing on the general health, came more and more fully to be realized. The establishment of the Strassburg clinic in new and larger quarters is of particular interest in connection with the present plans for the Forsyth Dental Infirmary in Boston.

## BUBONIC PLAGUE IN THE ORIENT.

The international medical conference on the plague, which was opened on April 3 at Mukden, has been in session during the past week; but detailed reports of its proceedings have not yet been received. It is further announced from Paris that a scientific French commission, headed by Dr. Metchnikoff, and composed chiefly of members of the Institut Pasteur, will go in May to Asiatic Russia to make extensive investigations there of the bubonic plague and the possible modes of its prevention. Meantime, report from Amoy, China, states that during the fortnight ending April 8, there were in that city 12 deaths of plague and 5 of smallpox, making a total of 37 deaths from the former and 24 from the latter disease since Feb. 11. From The Hague, it is reported that the epidemic of plague in Java, to which we referred in last week's issue of the Journal, is extending. In the vicinity of Malang, in the eastern part of the island, there are said to have been 46 cases with 26 deaths; and in the region about Batavia, the capital, there are said to have been already nearly 100 deaths from the disease.

## IN MEMORY OF JOHN C. MUNRO, M.D.

The Journal has received the following tribute to Dr. John C. Munro:

The Governing Board and Staff of the Carney Hospital feel that this, the first stated meeting of the year 1911, should not pass without an expression of the sense of sorrow and personal loss they feel in the death of Dr. John C. Munro, late surgeon-in-chief. His services to the hospital were invaluable and were rendered with a willingness and spirit that is worthy of the highest commendation. Honest, kindly and modest, a master of his art, high in his ideals and loyal to the institution, he exerted on his associates, on the public and on the profession at large a splendid influence that cannot well be measured.

The Carney Hospital has sustained a great loss and it is the wish of the Governing Board and Staff that this expression of sorrow and sympathy be sent to Dr. Munro's family and also be spread upon the official records of the institution.

By the Secretary,
John T. Bottomley, M.D.

## EFFECT OF CHOLINE DERIVATIVES ON BLOOD-PRESSURE.

In Bulletin No. 73 of the Hygienic Laboratory of the Public Health and Marine-Hospital Service of the United States, Reid Hunt and R. de M. Taveau report the results of their investigations into "The Effects of a Number of Derivatives of Choline and Analogous Compounds on the Blood-Pressure." Eighty-one such substances were studied, and their effects experimentally determined and tabulated. The importance of this piece of research lies not only in the possibility of discovering substances of therapeutic value, but in the fact that choline is one of the active principles in suprarenal gland secretion, is closely related to neurine, muscarine and other powerful poisons, is found in preparations of ergot and other important drugs, and has long been recognized as a possible source of danger in foods.

## UNFORTUNATE CONNOTATION OF "606."

As a result of Ehrlich's recent synthetic discovery of salvarsan, the innocent number "606" has acquired an unfortunate connotation, which suggests itself not only to members of the medical profession, but to many of the laity as well. It has already been dropped as a telephone number in several exchanges, and seems likely to share the unpopular fate of 13 and 23, though for a different reason.

## MEDICINE AS A "LIGHT BUSINESS."

In the window of a certain building in Boston may be seen the sign: "Rooms to Let. Suitable as Offices for Doctors, Dentists or Other Light Business." The question arises whether the practice of a "Divine Healer," whose office is nearby, would also be classified under the category of "light business."

# Correspondence.

## LETTER FROM THE PHILIPPINES.

Changes in Medical Officers. Taal Volcano Eruption. Annual Meeting of the Medical Association. Polished Rice and Beriberi. Salvarsan in Syphilis and Yaws. Ultraviolet Rays. Amebic Dysentery. General Health Conditions.

*[From Our Special Correspondent.]*

Manila, P. I., Feb. 28, 1911.

*Mr. Editor:* The last month has been a busy one in medical affairs in Manila and has been marked by many changes in personnel at the Philippine General Hospital; by a sudden influx of a large number of emergency cases brought to Manila from the regions devasted by the Taal volcano eruptions; by the annual meeting of the Philippine Islands Medical Association, which held its meetings at the Medical School and hospital buildings.

Although it is difficult to "hurry the East," yet in some respects Manila resembles a new western town in its rapid shifts and changes. During the last month, Dr. Philip K. Gilman has returned from a long vacation in the States to resume his duties as associate professor of surgery in the College of Medicine and Surgery and as assistant visiting surgeon to the Philippine General Hospital. Dr. W. E. Musgrave, professor of clinical medicine, and Dr. Victor G. Heiser, director of health of the Philippine Islands, and professor of hygiene, have started for the States via India and Europe for long vacations. Dr. Richard P. Strong, physician-in-chief of the General Hospital and professor of tropical medicine, has been summoned to China to represent the United States on the International Plague Commission gathered to study the bubonic plague situation. Dr. Donald Gregg, a former house pupil at the Massachusetts General Hospital, has been appointed assistant professor of tropical medicine at the College of Medicine and Surgery, and in the absence of Dr. Strong

is acting physician-in-chief of the Philippine General Hospital.

Early in February, Taal volcano, which lies about thirty miles to the southward of Manila, suddenly became violently active, and after many minor rumblings and earthquakes suddenly blew off its top, causing considerable loss of life and devastation. About thirteen hundred natives were killed in the several small barrios, or villages, which were destroyed by mud, steam and a tidal wave upon the lake surrounding the volcano, and many others were badly burned. For the first time in the history of the Islands, hospital accommodations were to be had to care for the victims of such a tragedy. About ninety cases were rushed to Manila and turned over to the General Hospital for care and shelter. As is usual at such times, the best among the Americans and Filipinos answered the call, responding generously with their time, energy and purses in helping the government care for the sufferers.

The annual meeting of the Philippine Islands Medical Association was held during the past week at the Medical School and hospital buildings. The meetings extended over three days, from Feb. 22 to Feb. 24 and were participated in by medical representatives from the army, the navy, the civil government service and by private practitioners. Papers of especial interest were read upon spinal anesthesia, which has been used with considerable success at Bilibid Prison; upon the relationship between beriberi and a rice diet; upon the use of "salvarsan" in yaws and syphilis; upon the effects of tropical sunlight, and upon the amebæ found in the human intestine.

Dr. Malloy has used stovaine in a large number of cases and considers it to be the anesthetic of choice in operations upon the rectum and prostate. Continued investigation upon the relationship between beriberi and a rice diet has shown conclusively that polished rice, rice freed from its pericarp, can and does cause in chickens and man a polyneuritis which in many cases is diagnosed as beriberi, and that unpolished rice, or a liberal diet of foods other than rice, promptly relieves this condition. Whether this polyneuritis is true beriberi is yet to be determined. At least, it has been proved that much suffering and physical disability among the native people can be remedied and avoided by substituting unpolished rice or a liberal diet for a meagre diet of polished rice such as forms the usual food of the native.

"Salvarsan" has been found by Dr. Strong to be even more astonishing in its seeming curative effects in yaws or frambesia than it is in syphilis. A single injection of "606" produces a complete disappearance of the strawberry-like tubercles on the skin within three weeks.

Further investigation upon the effects of tropical sunlight suggests that the result of the ultraviolet rays has been over-emphasized, and the effect of the ordinary heat rays not properly considered. These conclusions tend to discount the beneficial effects of special colored underwear.

Dr. E. S. Walker, who was previously associated with Dr. Theobald Smith at the Harvard Medical School, and who has been working at the Bureau of Science Laboratory for some months past on the morphology of different strains of amebæ, reports results suggesting that there are varieties of non-pathogenic amebæ which infest the water in the tropics but which probably are not an etiological factor in amebic dysentery. If further researches show that amebic dysentery comes only from fecal infection of food and drink, another health problem in the tropics will be in part solved.

General health conditions in the Islands continue excellent. At present, there is practically no cholera in Manila, and no plague cases have been introduced from the infected regions in China. Some cases of varioloid appear among the natives, and as communication between the Islands and the United states becomes more rapid and common, cases of measles and whooping cough are perhaps less rare than formally. An index of the health conditions in Manila is the fact that at the General Hospital considerable difficulty has been experienced in finding cases of amebic dysentery and malaria to demonstrate to the medical students. Streptococcus infections and associated conditions, such as scarlet fever and erysipelas, continue to be practically unknown. The seeming inability of the streptococcus to thrive in the Philippines is a bacteriological problem wholly unsolved. "G."

## BLEEDING "GRATIS."

BOSTON, April 15, 1911.

*Mr. Editor:* Medical competition of every degree and kind has, like quackery, existed since the birth of the practice of the healing art. In former days, when bleeding was carried to such fearful extreme, phlebotomy was a most lucrative operation and the source of considerable income to many. In the Stamford *Mercury* for March 28, 1716, occurs the following interesting item: "Whereas the majority of apothecaries in Boston have agreed to pull down the price of bleeding to sixpence, let these certify that Mr. Clark, apothecary, will bleed anybody at his shop *gratis*."

Very truly yours,
CHARLES G. CUMSTON, M.D.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, APRIL 1, 1911.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | 1,749 | 525 | Waltham | 7 | 0 |
| Chicago | 659 | 181 | Brookline | 9 | — |
| Philadelphia | — | — | Chicopee | 8 | 3 |
| St. Louis | — | — | Gloucester | 6 | 1 |
| Baltimore | — | — | Medford | 8 | 1 |
| Cleveland | — | — | North Adams | 11 | 2 |
| Buffalo | — | — | Northampton | 6 | 0 |
| Pittsburg | — | — | Beverly | 5 | 2 |
| Cincinnati | — | — | Revere | 3 | — |
| Milwaukee | — | — | Leominster | 2 | — |
| Washington | — | — | Attleboro | 7 | 1 |
| Providence | — | — | Westfield | 8 | 1 |
| Boston | 233 | 50 | Peabody | — | — |
| Worcester | 42 | 12 | Melrose | 4 | 0 |
| Fall River | 37 | 17 | Hyde Park | 3 | — |
| Lowell | 40 | 9 | Woburn | 10 | 4 |
| Cambridge | 45 | 13 | Newburyport | 4 | — |
| New Bedford | 29 | 12 | Gardner | 5 | 2 |
| Lynn | 18 | 3 | Marlboro | 1 | 0 |
| Springfield | 26 | 6 | Clinton | 2 | — |
| Lawrence | 40 | 21 | Milford | — | — |
| Somerville | 23 | 3 | Adams | 3 | 2 |
| Holyoke | 15 | 6 | Framingham | — | — |
| Brockton | 16 | 2 | Weymouth | — | — |
| Malden | 12 | 1 | Watertown | 6 | 1 |
| Haverhill | 19 | 6 | Southbridge | 2 | — |
| Salem | 14 | 4 | Plymouth | — | — |
| Newton | 13 | 1 | Webster | 2 | 1 |
| Pitchburg | 8 | 1 | Methuen | 5 | 1 |
| Taunton | 7 | — | Wakefield | 2 | — |
| Everett | 6 | 2 | Arlington | 1 | — |
| Quincy | 7 | 0 | Greenfield | 3 | 1 |
| Chelsea | 13 | 5 | Winthrop | 2 | — |
| Pittsfield | 7 | 1 | | | |

## RECENT DEATHS.

GEORGE CANNING HOWARD, M.D., M.M.S.S., retired, died in North Attleborough, March 19, 1911, aged seventy years.

DR. EDWARD PATRICK STANLEY HART, of Jersey City, N. J., died from pneumonia on April 9, at the age of thirty-seven years. He was graduated from the Long Island College Hospital, Brooklyn, in 1897, and for some time had been assistant visiting surgeon to St. Francis' Hospital.

DR. CHARLES A. OLIVER, who died last week at Philadelphia, was born in Cincinnati in 1854. He had practiced ophthalmology in Philadelphia for many years.

## BOOKS AND PAMPHLETS RECEIVED.

New and Non-official Remedies. 1911. American Medical Association.

The Care of the Baby. By J. P. Crozer Griffith. W. B. Saunders Co. 1911.

Hospital Management. Edited by Charlotte A. Aikens. W. B. Saunders Co. 1911.

A Textbook of Medical Diagnosis. By James M. Anders, M.D., and L. Napoleon Boston, A.M. W. B. Saunders Co. 1911.

Studies in Cardian Pathology. By George William Norris, A.B., M.D. W. B. Saunders Co. 1911.

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## Address.

# MEN, MANNERS AND MEDICINE.*

BY ROBERT M. GREEN, M.D., BOSTON.

OVER the beautiful iron gates that lead from the quadrangle into the gardens of New College, Oxford, twined with ivy of immemorial generations, is a scroll bearing still legibly the words, "Maners Makyth Man." This legend is the motto of Bishop William of Wykeham, founder of New College and of the celebrated Winchester School that bears his name, the oldest public school for boys in England. Apart from their pleasant medieval alliteration, the words are attractive as suggesting that the good bishop was a wise observer of "the ways and works of men," and realized how large a part is played by manners in the expression and determination of character. If, as Matthew Arnold says, "conduct is nine tenths of life," surely manners are nine tenths of conduct; and if for "manners" we read "*mores*," which probably was in Wykeham's mind, or at least in his subconsciousness, we give the motto the ethical connotation demanded by moralists and others to whom the suggestion of manners savors too superficially of the drawing-room. "Maners Makyth Man": decidedly the phrase is attractive, and the open gate over which you read it in the sunshine of an August afternoon is inviting, too. Let us enter, if not to grow in wisdom, at least to explore the garden and consider what fashion of man might arise from the manners and environment which here prevail.

This William of Wykeham, who founded the college, must have been a lover of nature as well as of boys and men, for both here and at his school in Winchester, the gardens are laid out with a lavish hand and an eye for the charms of perspective. The garden at New College extends as far as the old city walls of Oxford, which still form two of its boundaries, and whose gray flanks are an ideal background for the flaming phlox and the more delicate roses, which in England bloom till the snow flies. Though it has flowers here and there, the garden is not really a garden in our restricted sense, but an enclosed place, half meadow and half park, pleasantly diversified, with noble elms and rolling slopes, and some level lawn to suggest the desirable limitation and order of civilization. From the foot of one of the old crumbling round towers of the wall, preserved in an eternal luxuriance of ivy, one can look back through a vista of trees and shrubs to the college, whose dormitories and chapel and great hall stand clustered in academic dignity between the secluded garden and the world without.

It is such scenes, familiar in the every-day life of students in New College, as at other English universities, that have played their unconscious part in molding the manners and habits of thought of the men educated among them. In the great Memorial Hall of our own Harvard is the motto *Abeunt studia in mores*, "A man's studies pass into his manners of life"; and the phrase recurs to us as we meditate in Wykeham's garden. If "maners makyth man," "studies makyth maners"; and the studies pursued in such a place, which pass into and inspire the manners and thoughts of the college generations, must have a character which imparts something distinctive to the personality of those thus trained. Nor does this apply solely to academic scholars, but to all the liberal professions as well, and to none more than to medicine. It is a truism that physicians, more than any other class, as a result of their training and associations, come to view life very differently from any one else, so differently that they often grow into an almost clannish isolation from the rest of the human society which they study and serve. Moreover, the doctors of one country differ from those of another, and one cannot help feeling that it is something in the local environment of their education that makes them what they are. From the seclusion of Wykeham's garden it is diverting to reflect on some of these circumstances in other countries than our own.

In England a majority of the men who study medicine have come from schools and colleges like Wykeham's. New College itself has supplied its quota of more and less distinguished members of the profession. In such institutions they have studied Latin, Greek and mathematics, after the fashion which for centuries has proved successful in producing good and able men. They have learned, too, the gentle and vanishing art of orthography, can write a good letter and are intelligently familiar with literature. They have not neglected the sciences, nor have they pursued them to the exclusion of the arts. They have learned to think, and have learned it not solely in class-rooms, but out-of-doors. Not a few of the world's greatest scientific ideas have been conceived in gardens.

From such invironments, these men have gone to medical schools in the large cities, where specialized knowledge was superimposed on a well-laid general foundation. Yet even here, the humanities are not forgotten. Every school has its general library and, even in London, its garden, where the traditions and habits of college life may be maintained. When a man has obtained his medical degree, he serves as resident in some one of the larger or smaller hospitals. These, too, have their chapels and gardens, their opportunities for remaining in contact with other aspects of life. Some of these hospitals, especially in the smaller towns, are particularly fortunate in their surroundings. At Canterbury is one, the Kent and Canterbury Hospital, built on the grounds of an ancient priory, from the gate of whose garden one may catch fascinating glimpses of cloisters and old monastic ruins. Many of the English hospitals, indeed, are developed from old religious infirmaries and almshouses. One such, at Warwick, the Leicester Hospital, is reputed the oldest and most famous on its original

* Read at the annual meeting of the Boston Society for Medical Improvement, Jan. 30, 1911.

foundation, and its cloistered quadrangle is a spot to invite meditations on many topics, on men as well as on medicine. Even the modern hospitals have such stimulative environment as well. Behind the Royal Victorian Tuberculosis Sanatorium at Ventnor, on the Isle of Wight, is a steep wooded park, through which a glorious waterfall "leaps in cataract after cataract to the sea." Such a spot, overlooking the white chalk cliffs of the Channel, should have educative and therapeutic value beyond mere climate.

These, then, are some of the details of environment which determine the manners, the habits and customs of thought, the cultural background of physicians in England. As one meets them, older and younger, they are men of generalized education, not solely concerned with science or with money-getting, keen in the pursuit of the problems of their profession, but with a broad sympathy for other human interests as well. Their manners are something those of the scholar as well as of the physician, and medicine to them is more than a means of livelihood or an abstract science. And this humanistic habit, these manners that make the man, they have acquired from the nature and surroundings of their preliminary and professional training.

Now, in Germany, very different ideals and methods of education prevail from those that exist in England. Here the prospective physician spends his earlier youth at the gymnasium, a combination of high school and college, following a curriculum which, though not devoid of language and letters, is much more business-like and scientific in system. In his university, the spirit of militarism, which dominates the land, gets possession of him. Everything is system, method, organization towards a definite end, and that end usually a pretty materialistic one. Each student aspires to make his fighting corps, and in the process is highly interested in fighting his duels and drinking his beer. To be sure, German students are great athletes, but rather in gymnastics than in games. They are intensely fond of tramping and climbing, too, but their interest is rather in getting somewhere than in what they may see on the way. Of reading, of general culture, one seems to see and hear little. Those things are considered the business of scholars, and are relegated to them. In short, the temper of education in Germany is strenuous, materialistic, systematic, bent on accomplishment, with little heed for incidentals.

When a man, thus prepared, passes in Germany to the medical department of his university and later to his hospital, he follows the same method and spirit. He has before him a wealth of material, and he devours it with the same businesslike energy. Between him and his patients there seems seldom to be the same comradeship and sympathy that one notes in English and American physicians. He looks on them as cases, without much human interest. His medical and hospital life, too, are much such as had gone before. His amusements and diversions are of the same nature. *"Abeunt studia in mores."*

In fairness it ought to be said that many of the universities and hospitals have great natural beauty of environment. Most beautiful and typical of all is, of course, Heidelberg, which, to Americans at least, stands as the representative of all that is most fascinating and romantic in German university life. Here the glorious old castle, bowered among the wooded slopes that rise majestically from the river, commands the splendid valley of the Neckar and dominates the beauty and character of the scene. The university itself is in the little town that straggles at the foot of the hills. It is a famous place, comparable in position if not superior in size and importance to Oxford. But its buildings are dingy, it lacks in elegance and refinement, its atmosphere is of business rather than of leisured culture. The hospitals are near the university and nearer still to the river, and their character is essentially the same. Great possibilities in natural environment and beauty they have, but these are not made a part of the institutions. Doubtless those who work there feel their charm, but they feel it in a different way. The German esteems culture and natural beauty as they contribute to his own pleasure or advancement, the Englishman as their companionship leads him to closer sympathy and companionship with mankind in all times, past and present.

Incidentally, it should be said, that out of the Middle Ages there have survived, in Germany as in England, certain hospitals on ancient foundations which seem to retain something of a more picturesque character. But these are now almshouses or are not used for medical purposes at all. They are not institutions that make part of the working medical world. One of the most picturesque, at Nürnberg, built on a bridge spanning the river, is now left stranded in the mart of a busy mercantile city. Another, at Rothenburg, shares still the charm of that enchanted town. It is a round, redoubt-like building, incorporated in the ancient walls and fortifications, but within it is a fascinating court, with fine old trees, that might once have been a fit place for lounging and meditation. It is now, however, entirely disused. Such institutions, however, are but random survivals. The medical profession in Germany to-day is essentially a new creation, a result of the new imperialism that has made the people a nation. Though the inheritor of a great past, it does not strike its roots into that past. Its spirit is modern, intensive, practical. It achieves new things, it does not concern itself with incorporating the old into its new fabric. As a result, its achievements are splendid, but their temper and that of the men who accomplish them is different from that of our own country and of England. In Germany, as indeed everywhere, the studies, the interests, of the profession, pass into the character of its members. Training and environment work out the same law and illustrate the universality of the wise old bishop's apophthegm, "Maners Makyth Man."

Of the character of medical education and students in France, it is harder to form an esti-

mate, for the reason that the factors determining it are more subtle and difficult of analysis. In a general way, of course, the Lycée there corresponds to the German university, and to it the medical student comes from his previous preparation with the distinctive intellectual habits of his race. The educated Frenchman is above all a theorist, a thinker, and he can think, and through the lucid medium of his language express himself, more clearly and more logically perhaps than any one else. This trait, based probably on habits of study, passes, too, into the professional manners and customs of the French physician. With him everything is precise, definite, finished; the problem of a case or of a piece of research is clearly seen, the conclusion neatly drawn. The practice of his profession or the pursuit of his scientific investigation affords him something the pleasure of the mathematician. Let it not be inferred that he is not practical as well. Indeed, some of the most brilliant and useful of scientific discoveries are due to French genius. But these seem to have been made by intellectual penetrativeness more than by the patient empiricism of the German.

Of French schools and hospitals as expressive of professional character, there is perhaps less to say than is the case in England and in Germany. They are architectually beautiful always, for the Frenchman is first and always an esthete, and their artistic beauty must react as an environmental determinant. But it is beauty of an artificial rather than of a naturalistic sort. One French institution perhaps deserves comment in this connection,—the Morgue of Paris,—where, behind plate-glass and an exquisitely wrought brass railing, the unknown flotsam and jetsam of the great city used daily to be exposed, propped in chairs, a ghastly parody of some display in a boulevard shop-window. This pathologic parade, now happily stopped, seemed a surprising contradiction in the French character, whose nobler attitude towards the mystery of death is exemplified by the Monument to the Dead in Père Lachaise Cemetery nearby. With the French, to feel is to express, and the publicity which they give to things which among other peoples exist but are secluded is but another evidence that manners oft proclaim the man.

From the starting-point of our meditations it has been a far excursion through foreign fields; but we can return perhaps to Wykeham's sunny garden with a more illumined realization of the fundamental truth of his simple motto. After all, it is the habitual racial environment of a people which passes into their manners and determines what fashion of men they shall be. In our comparisons of different countries, their traits and customs, their men and their physicians, we have intended nothing invidious. In each, the local habit is its own best reason for being, and best fits those who wear it for their particular service. Nor have we purposed any uncomplimentary comparison with our own country. In America we were fortunate in starting afresh. We brought with us many aspects of environment from England and English university, and with these have incorporated from time to time the better elements from other lands. Our early university training resembled that of English colleges more than it does to-day, and in our older colleges, there were associations and suggestions like those that throng Wykeham's garden at Oxford.

The sentiment of an Englishman to his college, and the charm which creates it, are much like those expressed in the seldom heard, unfortunately almost forgotten, but most beautiful stanza of "Fair Harvard."

> Thy shade is more pleasant, thy sunshine more dear,
> Than descend on less privileg'd earth:
> For the great and the good in their beautiful prime,
> Through thy precincts have musingly trod,
> As they girded their spirits and deepened the stream
> That make glad the fair city of God.

Something of this devotion, something of this loyalty, which is midway between love and patriotism, and partakes of both, is the feeling inspired by the scenes in which the English boy pursues the studies which pass into his character and determine the manners which make him a man.

Our modern system of education in America seems to have departed widely from many of these ideals, but they are still potential and are at the core of our nationalism. In medicine, as in other activities, we have developed particularly a trait which seems characteristic of our people. We have become opportunists, that is, we seize the thing that at the moment is essential to be done, and do it, usually successfully. This American faculty Kipling has described in the phrase

> "And turns a keen untroubled face
> Home to the instant need of things."

This opportunism is perhaps not a great habit of mind, but it is useful, and does not preclude higher occasional functions. It is doubtless the result of the special circumstances of our national development, and it has passed into our national character. One sees it reflected in the daily manners and habits of thought and action of students, of physicians, of men in all walks of life.

In conclusion, then, we may, perhaps, from our somewhat desultory meditations, have reached the ancient realization that there is nothing new; that Wykeham's words of six centuries ago were true centuries before he uttered them; that manners made the cave-man as surely as they make us. But it may not have been without profit, if we realize also that, for us in medicine, it is the nature of the studies we pursue, and of the surroundings in which we pursue them, that largely determine our professional manners of life and thought. These cannot be better than such as are inspired by the sunny garden of which we now take farewell.

## Original Articles.

# CLIMATIC TREATMENT OF TUBERCULOSIS.*

BY GUY HINSDALE, M.D., HOT SPRINGS, VA.,

*Secretary of the American Climatological Association; Ex-President, Pennsylvania Society for the Prevention of Tuberculosis; Fellow of the Royal Society of Medicine, etc.*

THERE are some people, especially of a skeptical or combative tendency, who refuse to admit that climate plays any important rôle in the cure of tuberculosis. One of these, who was formerly in charge of a widely known institution for the study, treatment and prevention of tuberculosis, has said: "I desire to go on record as believing that there is no therapeutic value in climate." This same physician probably owes his life to the fact that thirty years or more ago he left the city and removed to the mountains of Pennsylvania for the relief of a pulmonary disease and recovered. Such an attitude is a study for the alienists or psychologists and would hardly seem deserving of serious attention except that we hear such statements as this: "If a case of consumption cannot be cured in its home climate, it cannot be cured anywhere."

I think there is no doubt that if any in this audience were told that he is in the incipient stage of tuberculosis he would immediately take steps to familiarize himself with the line of treatment which would, before much time had elapsed, involve leaving Boston, New York or Philadelphia, as the case might be, and so live as to enjoy what air and sunshine and other atmospheric features might afford.

One reason why home climates, if such a term can be used, have grown in favor is that it has been found necessary to establish a large number of state sanatoria, or at least to seek aid for private sanatoria from some of our state legislatures. It is a matter of expediency to have such sanatoria, and legislators must be convinced that good results or, if necessary, the best results, can be obtained close at hand. We are all heartily in favor of such institutions whether we should wish to stake our chances of recovery in any of them or not.

Of course we do not claim that there is any specific climate for tuberculosis, and the long search for such climate, a search lasting for nearly two thousand years, is apparently at an end.

Now what is left to us, and what do we understand by a climatic change?

We all know that the New England climate is changeable, i. e., the meteorological conditions are constantly varying, just as they also vary in the Mississippi Valley and along the Atlantic seaboard. But the New England climate is peculiarly unstable and, as Charles Dudley Warner has said, "New England is the battleground of the weather."

We have a change of climate when we leave the hot city in summer and go a few miles into the country or to the shore. We have floating hospitals so that this climatic change may stimulate a sick child to recovery. A so-called "home climate" may work a cure or aid in a cure because we leave the climate of our homes, often too dry with furnace heat, too poorly ventilated, too damp from lack of sun, and remove to more hygienic dwellings in the same locality where sun and air and cleanliness abound.

But, to take up the principal question at issue, the first thing usually asked is whether one should go to the Adirondacks, Colorado, New Mexico, Arizona, California or elsewhere in order to get what is so frequently claimed to be the greatest climatic advantages. No one who has visited these localities can fail to be impressed with the living examples of recovery from tuberculosis. Denver, Colorado Springs and innumerable towns in southern California abound in doctors who have practically recovered from this disease and are earning a living that is the envy of their Eastern confrères.

Would they have recovered in their Eastern homes? Almost to a man they answer, "No." I have never heard of an exception. But the case is so hard to prove from such *ex parte* evidence. However, it is interesting to note Dr. H. B. Dunham's conclusion. He stated in 1904, and reaffirms it in 1911, after visiting discharged Massachusetts Sanatorium patients in the West, and after comparing Massachusetts Sanatorium statistics with those of the United States Army Sanatorium at Fort Bayard, that "the results corroborate our belief in the efficacy of residence in dry climates, but with a smaller margin in its favor than was anticipated. The proportion of people adapted for treatment in these extremes of climate must be more equal than thought possible by climatologists generally. That is to say, a small majority of the patients at Rutland would probably do better at Fort Bayard, and a large minority might do better here [at Rutland]." But no one can say positively in any given case what would have been the outcome had he chosen differently. Dr. Solly used to say "Had I been living in London to-day I'd be dead." He lived and worked for thirty years in Colorado after trying other climates, only to be disappointed in them.

We need not discuss the bearing of what to do for the poor or what to do for the rich, or the question of food or the physician's medical management; these are important and may govern the choice, but what we want is an answer to the abstract question of the influence of climate.

We believe that *a good climate*, and by that I mean better than any city can afford, is of *first importance in governing the manner of life and that it should always be afforded to patients carrying out the hygienic, dietetic treatment of all forms of tuberculosis and of many other diseases.* There are some elements of climate that have a more positive influence in hastening cure than others. The first place must be assigned to an abundance of air as nearly as possible bacteriologically and chemically pure. It goes without saying that city air is polluted by smoke and dust and all dwellings whether in the city or the country are far below the standard of purity desirable. Only

* Read at the meeting of the Boston Medical Library and Suffolk District Medical Society, Feb. 1, 1911.

on the sea or at the highest elevations can we get air really pure, but we can approximate it by living out of doors. There is a climate of the city, a suburban climate, a climate of the country, woods and plains, all differing as regards purity of air. We are all probably agreed on this point.

Next comes the subject of sunshine. We admit that good results are obtained in cloudy regions, as, for instance, in the Adirondacks and at Rutland; but there is at least no objection to sunshine, and I believe that the moral effect of bright sunny days and plenty of them is very great. Invalids always welcome the sun. We can protect ourselves from too much, if need be, and I for one believe that sunlight does a vast amount of good, and sunny regions are much to be preferred, other things being equal. That is the great asset of our western plains and mountains, and it is a real asset that counts. Of course there are exceptions. Tastes differ. Dr. Solly used to relate the story of one of his countrymen who had been sojourning in Colorado and finally returned to England. As he landed in a fog and found himself home again he exclaimed, "Thank God! I am out of that beastly sunshine." I do not suppose he intended to be irrational or ungrateful for the greatest of all natural gifts.

Now, what other climatic conditions besides pure air and abundant sunshine have we to help us? Is a cool climate or a warm climate the best? Is a dry or humid climate to be preferred? These qualities of temperature and humidity may as well be considered together. Undoubtedly for the majority of cases in the first stage the climate should be dry and the temperature comfortable — not warm enough to be relaxing, but not so cold as to be repellant and restrict exercise or out-of-door life. It is true that in special localities better results are obtained during the cold months than during the summer. This is true of the Adirondack Cottage Sanitarium in the state of New York. One reason for this is that in winter the lakes and ponds are frozen and covered with dry snow; the air is drier. It is far enough north and at a sufficient altitude to escape the alternate freezing and thawing that is experienced in New York City, where unquestionably it is less favorable for the consumptive during the cold season than during the warm months. Take Florida and South Carolina: Undoubtedly the best season there is during the winter months, as the summers are oppressively warm and wet. The winter is the dry season and the temperature is comfortable. The interior of Florida forty or fifty miles from either coast is reasonably dry. As far as Arizona and New Mexico are concerned, the summers are too hot at all the lower elevations for any invalid, but at the higher elevations, 5,000 or 6,000 or 7,000 feet, the summer heat is not oppressive. Along the southern coast of California, and at many of the resorts somewhat inland, as good results are obtained in summer as in winter, although the latter is the more fashionable season for Eastern visitors.

The southern California resorts which have been most frequented by consumptives vary greatly between themselves as regards the important question of humidity. That a place is frequented by consumptives does not prove that it is a desirable place for them. Many of them are misguided, wandering invalids, sent out from the East with little or no judgment as to their individual needs, and with no proper knowledge on the part of their medical advisers as to the humidity or local character of the places to which they are destined. A man, for instance, will go to Los Angeles. It does not take him long to find out that while the air is fairly dry from 11 A.M. to 5 P.M., it is always damp at night. Six hours out of twenty-four are dry; the remaining eighteen are decidedly damp. The physicians of Los Angeles do not claim that their climate is a suitable one for cases of tuberculosis, and usually send these cases to the interior stations, such as Monrovia, Sierra Madre, Redlands or Riverside. Many are sent to Arizona and Colorado. Experience shows that consumptives do better if they avoid the coast region. Or, if near the coast, as at Santa Barbara, they are better if they find a site at some elevation on the hillside or in the Ojai Valley or other mountain valleys beyond the reach of the morning fog and the excessive humidity at the shore. The records of the Weather Bureau show that these places on the coast or within reach of the fogs which penetrate inland have a greater humidity than Boston or New York, the mean annual absolute humidity for Santa Barbara, Los Angeles and San Diego being given at 4.20, 4.42 and 4.34 gr., more than one third more than that of New York and Boston, 3.19 gr. and 2.84 gr. The mean annual relative humidity of all these places mentioned is from 72 to 73%. But the advantage of places like Santa Barbara, San Diego, Redlands and Riverside lies in the fact that the mean annual humidity shows a remarkable variation during the twenty-four hours compared with places like Boston, New York or Philadelphia, where the daily range is much less. At Redlands, fifty miles inland from the Pacific Ocean, one of the best known stations, the hygrometer has been known to indicate in fair weather 55% at 4.30 P.M. amd 80% at 6 P.M. The relative humidity is sometimes as low as 30% for a limited time during the day, and 70 to 80% at night when the temperature is from 44° to 60° F.

It may as well be stated that the government records of humidity are quite misleading when we use them to judge of the climate of any given place. These observations are made at 8 A.M. and 8 P.M., but in the invalid's day, made up of the intervening hours, the relative humidity reaches a much lower mark than the records show. I often observe a relative humidity in Virginia of 35 or 40% at 2 P.M., and 95 or 98% at night or in the early morning, especially when dew falls after a bright, invigorating day. I think that people whether sick or well adjust themselves to these natural changes of humidity if properly clothed and constantly in the open air, but when subject to rapid changes in humidity, as in going back and forth from the excessively dry air of a

house in winter to the damp air outside, the demands upon the mucous membranes are very great and such frequent and violent changes certainly do harm to susceptible people. Such rapid variations or alternations of the humidity of the inspired air I think are as bad as would be rapid alternations of altitude involving variations of several thousand feet.

Some patients, however, seem to do better with a humidity greater than that chosen for others. If we have a low relative humidity, and at the same time a moderately low temperature, the general effect is tonic and it is beneficial in conditions of irritability of the respiratory mucous membrane; but if the temperature is very low, this may be rather irritating. We find atmospheric conditions like this from Minnesota to the Rockies and through Manitoba and Alberta.

High relative humidity with low temperature certainly favors catarrh, and we have such conditions all winter long in the region of the Great Lakes and in New York and New England. Probably the best combination is a low humidity



Sea Breeze Hospital, Coney Island, N. Y. Daily scene in winter Cribs on porch.

and a moderately cool temperature; the average tuberculosis patient makes his best gains in cold, dry weather when such conditions prevail. But of course there are exceptions, and some do better with a high relative humidity and a warm temperature; these are not numerous and probably include more of the patients in later stages when expectoration is profuse and vitality is low.

Dr. William Gordon, of Devonshire, England, has just published a book in which a close relationship in shown between the prevalence of strong rain-bearing winds and the presence of phthisis. He confined his investigations to Devonshire, covering the period 1860–1904. Special effort was made to isolate the influence of rain-bearing winds and all other concomitant factors, including social condition, meteorologic features, soil, etc. After eliminating the possible influence of each one of these elements, the conclusion seemed to the author inevitable that rainy winds increase the phthisis mortality. This influence was notable in Devonshire as well as in Wales, Scotland, Germany, Corsica, Spain and Italy. Dr. Gordon shows that the influence of soil, hitherto disputed, seems likely to be shown at least as important as Buchanan thought it to be; but the effect of altitude *per se* on the prevalence of the disease seems like to be proved relatively small, if it be not actually non-existent.[1]

The old idea about equability of temperature, at least between the temperature of midday and midnight, is not of great importance; all mountainous stations show great variations in this respect. Some variability tends to stimulate the vital activities, but in older people and those who are feeble, great variability is a disadvantage. A moderately cool or cold atmosphere tends to stimulate the appetite and thus favors nutrition.

As far as altitude is concerned, it probably has not, *per se*, any great influence; certainly to my mind not so much as we used to think. However, altitude is incidentally associated with mountain life or life on the plains, with more sun, less moisture and scattered population. We should not forget that surgical tuberculosis is always favorably influenced by a seashore residence suitably chosen.

I never shall forget the wonderful impression made on visiting the Sea Breeze Hospital for Tuberculous Children on Long Island, N. Y. Constant outdoor life in all weather worked miraculous cures after the most formidable operations for bone tuberculosis in patients whose physical condition on admission was most unpromising. All the great French sanatoria for tuberculous children are located on the seashore; and the Rhode Island Hospital maintains a branch for this class of cases on the shores of Narragansett Bay.

Our lamented Dr. Knight formulated some opinions based on his long experience. He was a keen observer and he had the great satisfaction of seeing many a patient recover after climatic treatment. He limited the age of those resorting to altitude to fifty years. In temperament he preferred the phlegmatic to the nervous, with an irritable heart, with frequent pulse and inability to resist cold; and with the latter we must be careful not to include those who show nervous irritability from *disease*, not temperament. Patients who are irritable from disease are generally benefited in high places. As regards disease, he first considered cases of early infection of the apices of the lungs with little constitutional disturbance, and, although these generally do well under most conditions, yet considerable experience assured him that more recover in high altitudes than elsewhere.

It is best to begin with low altitude in patients with more advanced disease showing some consolidation but no excavation; also when both apices or much of one lung is involved and the pulse and temperature are both over 100.

[1] William Gordon, M.D.: The Influence of Strong, Prevalent Rain-bearing Winds on the Prevalence of Phthisis. H. K. Lewis, London, 1910.

Hemorrhagic cases, early cases with hemoptysis and without much fever, are benefited by high altitudes. This accords with the latest reports from the United States Marine Hospital Sanatorium at Fort Stanton, N. Mex., altitude 6,200 feet. Dr. F. C. Smith records 56 deaths from pulmonary hemorrhage in a total of 524 patients since the hospital was opened in 1899. His conclusion is that pulmonary hemorrhage is not more frequent at high altitude than at sea level, but the results are perhaps more often serious, especially in those with impaired circulation.[2]

Patients with advanced disease, those with cavities or severe hectic symptoms, should not be sent to high altitudes. A small, quiet cavity is not a counter-indication; hectic symptoms are counter-indications. Patients in an acute condition should not be sent away.

Convalescents from pneumonia or pleurisy are usually well suited for elevated regions.

Advanced cases of tubercular laryngitis, if good local treatment and freedom from dust can be obtained, may do no worse in elevated regions than elsewhere.

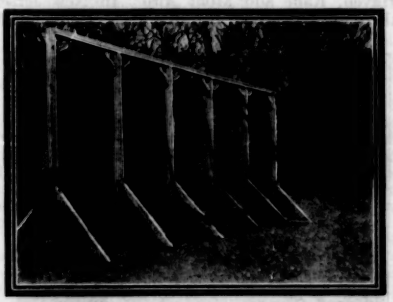
In cases complicated with cardiac dilatation we cannot advise altitude; but a cardiac murmur resulting from a long past attack of endocarditis with no sign of enlargement or deranged circulation should not prevent.

Nervous derangements of the heart are usually counter-indications.

Fort Stanton is open to sailors in the merchant marine and they are transferred from the various marine hospitals to this admirable inland sanatorium. It was found that the results have been nearly three times as good in the cases which left the home stations, i. e., the local marine hospitals, without fever as in those who had a temperature of 38° C. (100.4° F) or more within two weeks of departure. The deaths in those leaving afebrile were to those leaving with fever as 22 to 59; the arrests as 19 to 7½; the apparent cures as 10 to 0. Surgeon Smith holds that the case that should be sent to a distant climate immediately upon diagnosis is exceptional and he also adds that neglect to make an early diagnosis does not warrant precipitate haste in sending the victim away when it is finally established. The psychologic moment for a climatic change is when there is a comparative quiescence of the lung process under treatment at home, when nutrition is improved and further inprovement is slow (Francine). Climatic change, however, must sometimes be made, as we will see later on, when the hoped-for stage of quiescence does not occur.

Before allowing patients with pulmonary diseases to go long distances or to make any great change to higher altitudes, some caution should be given. In the first place, patients should not make any physical exertion for two or three weeks after arrival. The air may be stimulant, there may be sights to see and many dangerous invitations given, but it is absolutely necessary that the patient should be adjusted to the new atmospheric conditions. Acclimatization is necessary to comfort and safety. In the old days it was accomplished by the slow ride in the stage coach over the plains. We cannot go back to the old methods, and, therefore, we must exercise greater caution. Financial considerations are highly important. Expenses are usually underestimated, and the want of sufficient means, the need to economize as regards the necessities, not to speak of the luxuries of life, is a dreadful handicap and should bar out many a case that succumbs for want of the very comforts he had left behind. It would be far better for such patients if they should enter some special hospital or sanatorium for consumption such as are found in most of our Eastern states.

No one should be sent away without definite and satisfactory knowledge of the place to which



Sea Breese Hospital, Coney Island. Winter amusements of children

he is sent, and without a letter of introduction to some favorably known practitioner containing a statement of the main points in the case.

In matters of climate, as in many other fields, it is the man behind the climate who will help the patient, save him from errors and indiscretions, advise him and direct him as to local surroundings and enable him so to live that his disease shall be arrested.

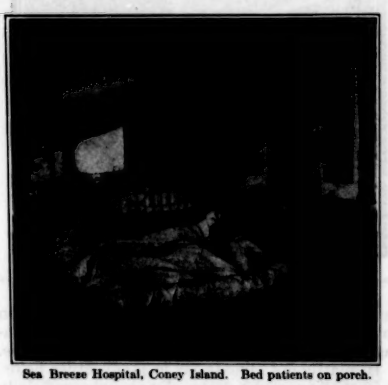
Some localities favorable for tuberculous patients have already been mentioned. Taking the country as a whole, we naturally look to the elevated, sparsely settled regions of Colorado, New Mexico, Wyoming, Montana, Nevada, Utah, Arizona and California. The slopes of the Rocky Mountains and the Great Basin are justly entitled to first choice, provided always that other safeguards than climate are to be had for the protection, the comfort and nutriment of the patient. Texas, especially the central and higher western portion, must be included in this great area. Life in Texas was formerly rather too rough and food and accommodations were too primitive for fastidious people, but now at places like San Antonio and El Paso these defects have been remedied. The winter climate of Texas is very agreeable except when the Texas norther descends and holds everything in an icy clasp.

[2] Public Health Reports, United States Public Health and Marine-Hospital Service, Nos. 35 and 51, by F. C. Smith, Passed Assistant Surgeon, Washington, 1910.

However, this is not altogether a disadvantage, *if not too severe.*

Florida suits some cases of phthisis. The interior of the state is sandy and the winter and spring climate is excellent. The cultivation of orange groves and the other agricultural features of the state have given many a patient a profitable occupation that he would never have found elsewhere.

Thomasville, in Georgia, sixteen miles from the Florida line, and Aiken and Camden in South Carolina, have long had a reputation for the relief of pulmonary affections. Asheville, N. C., is more elevated (2,000 feet) and is an excellent "all-the-year-round" climate. Special attention is given to tuberculous patients at this resort, and this is something that cannot be said of all the good places. In Pennsylvania suitable places are found in the Pocono Mountains, at White Haven, Kane and Mont Alto. In New Jersey there are Lakewood, Brown's Mills, Haddonfield,



Sea Breeze Hospital, Coney Island. Bed patients on porch.

Vineland and, for special cases, such as chronic fibroid phthisis, we may advise Atlantic City.

In New York there are the Adirondacks, especially the vicinity of Saranac; Liberty, in Sullivan County, where there is an excellent sanatorium. In New England there are institutions at Rutland and Sharon, Mass.; Wallum Lake, R. I.; Wallingford, Conn. But, as we have said before, the choice of a place, whether near home or at a distant point, involves all the questions of diagnosis, of temperament, of financial resources, all of which you must weigh as conscientiously as though your own life depended on it.

Of late, English physicians have been making more extended use of the higher Alpine resorts. Among these, Davos Platz, altitude 5,200 feet; San Moritz, 6,000 feet; Arosa, 6,100 feet; and Leysin, 4,712 feet, are usually chosen. Their chief characteristics are an atmosphere of dry, still, cold, rarefied air; absence of fog, few clouds and very little wind. There is, therefore, strong sunlight with a grateful warmth in the sun's rays.

In selecting cases for treatment by change of climate we must exercise as much discrimination as in applying any other remedial measure. Indeed, more caution should be used, for the patient will pass out of observation and in most cases the advice given involves the more vital consequences.

Among the numberless histories of the climatic cure I will give only one, and I think I may safely let it stand as a good example by which to let the argument rest. The history is that of a physician whom we all love and respect. It was published, together with twenty other carefully recorded histories, by that prince of clinicians, the late Dr. Alfred L. Loomis, in the *Medical Record* and formed part of a paper read before the Medical Society of the State of New York in 1879, a paper which we commend to your attention. Dr. Loomis says:

"At the age of twenty-five this patient, being of good family history, began to lose his health in the winter of 1872. His symptoms were rapidly becoming urgent; he was examined by several physicians. Extensive consolidation at the left apex was found, extending posteriorly nearly to the angle of the scapula; on the right side nothing was discovered save slight pleuritic adhesions at the apex.

"He was ordered South, but returned in the spring in no way benefited. On the contrary, night-sweating had set in, and his fever was higher. In the latter part of May he started for the Adirondacks, the ride in the stage being accomplished on an improvised bed. His condition at this time was most unpromising; he had daily fever, night sweats, profuse and purulent expectoration, had lost his appetite and was obliged constantly to have recourse to stimulants. Weight about 134 lb. He began to improve at once, his appetite returned, all his symptoms decreased in severity, and after a stay of more than three months he returned to New York weighing 146 lb. with only slight morning cough, presenting the appearance of a man in good health. A few days after his arrival in New York he had a chill, all his old symptoms returned and he was advised to leave for St. Paul, Minn., where he spent the entire winter. He did badly there; was sick the greater portion of the winter. In the spring of 1873 he again went to the Adirondacks. At this time he was in a most debilitated state, was anemic, emaciated, had daily hectic fever, constant cough and profuse purulent expectoration.

"The marked improvement did not commence at once, as it did the previous summer, and the first of September found him in a wretched condition. I then examined him for the first time and found complete consolidation of the left lung over the scapula and suprascapular space, with pleuritic thickenings and adhesions over the infraclavicular space. On coughing, bronchial râles of large and small size were heard over the consolidated portion of the lung. Over the right infraclavicular region the respiratory murmur was feeble, and on full inspiration pleuritic friction sounds were heard. I advised him to remain at St. Regis Lake during the winter, and although he was repeatedly warned that such a step would prove fatal, he followed my advice.

"From this time he began slowly to improve. Since that time he has lived in this region. At the present time his weight is 158 lb., a gain of 22 lb. since he first went to the Adirondacks in 1873, and 10 lb. more than was his weight in health. He has slight morning cough

and expectoration, his pulse is from 72 to 85 and he presents the appearance of a person in good health. In his lungs evidences still remain of the disease he has so many years combated.

"Although he has made three attempts to live in New York, at intervals of two years, each time his removal from the mountains has been followed within ten days by a chill, and a return of pneumonic symptoms — symptoms so ominous that he has become convinced that it will be necessary for him to remain in the Adirondack region for some time to come."

We all know the after history of this patient. Thank God, he is still living, — still working, — and there are thousands living to-day who owe their lives to the example which he has set them. He seized the principle of climatic treatment and adapted it to the individual.

I recently sent the following question to the deans of medical colleges in Boston, Chicago, New Orleans, Los Angeles and Montreal. I knew nothing of the views of these men on this subject except one; of course we all know that every one from California has decided views on climate. The question was:

What would you do for yourself climatically if you were told for the first time that you had incipient pulmonary tuberculosis?

Here are the answers:

In answer to your question of Dec. 26, I would say that I would treat myself as I do patients on whom I make the diagnosis of incipient pulmonary tuberculosis, that is, refer them to a local man who specializes in this disease, and ask him to look them over and refer them for climatic treatment in accordance with his knowledge of climatic conditions suitable to the individual case. Were I to start out to select a climate for myself, I would be much more influenced by the physician under whose care I would come in the new place than by the actual climate, and would probably select either Saranac Lake or Asheville, N. C., as I know and have confidence in physicians in each place. Were they to decide that I was better suited to some other climate, I would move on under their advice. If it were possible, I believe that I would undoubtedly leave Boston, had I incipient tuberculosis.

Very truly yours,
HENRY A. CHRISTIAN,
Boston.

I would strike for the wild pine woods of northern Michigan or Wisconsin and stay there.

A. R. EDWARDS,
Chicago.

In answer to your question, I may say that if I had incipient tuberculosis I should either go to Saranac or St. Agathe in Canada. I employ the open-air treatment.

F. J. SHEPHERD,
Montreal.

If I had to answer your question categorically I would say that I would ask the advice of one or two men living in my own community as to what I should do for myself climatically if I were told for the first time that I had an incipient pulmonary tuberculosis.

The practice among the profession in New Orleans is to send patients to St. Tammany Parish, in Louisiana, where the growth of piney woods is thick and ozone plentiful. When the particular case justifies, the patient is sent to the plains of Arizona or New Mexico, and, rarely, to El Paso, Tex. A few patients go to Colorado.

ISADORE DYER,
Tulane University, New Orleans.

Perhaps I can best answer your question by telling you what I did when I was told this very thing fifteen years ago. Having contracted tuberculosis in New York City, I sought a better climate for an outdoor life, spending the first summer in the Adirondack Mountains and in November of that year going to California, where I lived for one year in the foothill region near the coast at an elevation of 1,000 feet, free from responsibility and work. After the first year I never had any return of my pulmonary tuberculosis.

I believe a change of climate is more a question of finances than anything else. If one has not the necessary means to have what is right in a different climate, his chances for a cure are much better with home treatment, but when a better climate can conveniently be added to other measures of treatment for pulmonary tuberculosis, it should be advised.

W. JARVIS BARLOW,
Los Angeles, Cal.

Dr. D. Bryson Delavan, of New York, replied as follows:

"First, I would immediately consult Dr. Edward L. Trudeau at Saranac and there try to gain an accurate knowledge of the particular type of the disease which my case represented and of the general hygienic and therapeutic measures which would best meet its conditions. Secondly, if the Adirondack region proved suitable, I would remain there; if not, I would try to find another climate best adapted to my case.

"The above answer is meant to imply that the same locality may not be alike beneficial in all cases of tuberculosis. Some discrimination must be used in the selection of a place both with reference to the climate itself and also to the special conditions present at the place. However good a climate may be, it is absolutely essential that the patient be where he can secure medical advice of a high order. The truth of this proposition is proved by the fact that large numbers of patients under good medical advice make successful recoveries at home.

"My preference for the Adirondacks is based upon the fact that the region affords, first, a pre-eminently good consultant and, second, an excellent climate for the purpose within easy reach of home. It thus illustrates well the general idea which I have in mind. In dealing with the subject, there is something to be said upon the disadvantages of a climate which offers too sharp contrasts with that in which the patient must ultimately live, although in many cases the beneficial results of the clear cold atmosphere of high altitudes are apparent.

"Reviewing the matter in general, altitude seems to occupy an important place in the climatology of tuberculosis. Given an elevation of several thousand feet above the sea, surroundings suited to the case in hand and highly skilled medical supervision, the conditions at the present stage of our knowledge of the subject would seem to have been fully met.

"I am well aware of the value of certain seaside climates both in this country and abroad. On the whole, however, they are inferior to localities which are high and somewhat dry. Much might be said about the undesirability of the surroundings often met with at some of the most widely advertised sanitaria, especially of the German type, where the fact of invalidism is kept constantly before the mind of the patient. To me this would be an important objection."

It is no easy matter to combine the climatic cure with all the accessory features necessary to get the best results. We are always learning by the experience of others, and the difficulties encountered, even at the present day, are well illustrated by the experience of our Navy Department in furnishing this method of treatment for tuberculous sailors. Some years ago the Surgeon-General of the United States Navy, on account of the increasing number of tuberculous cases arising in the service, established a camp at Pensacola, Fla., but for several reasons it was decided to select another site. The Surgeon-General reported in 1907 on this matter as follows:

Extract from report of the Surgeon-General, United States Navy, 1907.

"The ideal location for a tuberculosis sanatorium should meet the following requirements:

"(1) Altitude, from 2,000 to 6,000 feet.

"(2) A maximum amount of sunshine.

"(3) A maximum amount of dryness.

"(4) Temperature condition without great extremes, but with variability rather than equability.

"A combination of the above-mentioned conditions will give a climate in which the consumptive can live out of doors the maximum amount of time, day and night, during the entire year, which, above all, is the great consideration. These conditions were found admirably combined at the site selected in Colorado.

"To the successful conduct of a sanatorium for tubercular cases there are other features almost as necessary as a favorable climate, to wit, nearness to a base of supplies, convenient transportation facilities, abundant water supply, and, but not least, a variety of provisions for the amusement and diversion of the patients. These must be supplied as a necessary part of the equipment of the sanatorium, to offset the otherwise inevitable nostalgia and discouragement to which the consumptive is subject, and which are two of the most potent causes of lack of improvement, and without doubt two of the most difficult accompaniments of tuberculosis to successfully combat.

"New Fort Lyon is far superior in every way to all the other available places inspected, and is excellently adapted to the purpose in view. It has an altitude of 3,800 feet above the sea level and is situated on the north bank of the Arkansas River, five miles from the town of West Las Animas, on the Atchison, Topeka & Santa Fé Railroad, which passes within one mile of the reservation. The nearest spur of the Rocky Mountains is about one hundred miles distant.

"The climate is mild and dry, with a maximum supply of sunshine and a minimum number of cloudy days, comparing favorably with both Fort Stanton and Fort Bayard, N. Mex. The summers are a little cooler, the winters a little colder, the amount of rainfall, as shown by observation, a little less, and the extent of sunshine equal to that enjoyed by the above-named places, being in the neighborhood of 80 to 85% annually. In the summer the mornings and nights are bracing, and even at midday the heat is never exhausting. The winter climate is so satisfactory that in years past the Indians for hundreds of miles around always wintered in this valley. The average rainfall is eleven inches, which constitutes a very dry climate, and snow falls infrequently and is seldom more than three inches in depth and disappears quickly."

But in a recent letter from Surgeon-General Stokes I am informed:

"While the patients appear to do well at our sanatorium, in my opinion it is too remotely placed, it has not been found to have the climatic features the place promised, and, from an economical standpoint, it is enormously expensive for maintenance and general unkeep of the plant. Dust storms are frequent at most seasons, and the patients show ill-effects from exposure to these influences. In the winter time paralyzing blizzards have gripped the locality. Our medical officers have done wonderful work in building up the plant, which is fast approaching a garden spot in the desert."

To sum up this matter, I find myself firm in the belief that for the majority of incipient cases, where the patient can well afford it, life in a selected locality in the West offers the best prospect of cure; but that for eastern patients a period of training in an eastern sanatorium is highly desirable, — the first and most important stage in beginning any climatic treatment. I believe that dryness, sunshine and altitude are features of the best climate, but that they decidedly disagree with some patients when presented in extreme doses as in some of our southwestern resorts. I agree with Dr. Dunham as expressed in a letter to me:

"Given simple pulmonary tuberculosis (not far advanced), somewhat over 60% of such cases will do better and live longer in the West than they would in the East, supposing every other consideration to be equal; also that nearly 40% of the total will do better and live longer in the East than in the West, similar conditions prevailing in both places. Of course those comprising this latter 40% in the East may not do quite as well proportionately as those of the 60% in the West, but in the East they will be doing the best that they can, and a small majority (of the 40%) can be cured under eastern conditions that would probably fail utterly in the West. In other words, I believe that conditions other than money, nostalgia, etc., should enter into the question of cases of tuberculosis being treated and remaining West or East.

"Doubtless every patient who is able to afford it easily should try the West; the first and essential part of the western trial being a period of regulated régime in the East."

## Books to be read:

"Gaining Health in the West." (Colorado, New Mexico, Arizona.) By George B. Price. New York: B. W. Huebsch. 1908.

"The Wilderness Cure." By Marc Cook. New York: Wm. Wood & Co. 1881.

"The Adirondacks as a Health Resort." By Joseph W. Stickler, M.D. Putnam's Sons. 1886.

"Camp Cure." By S. Weir Mitchell. J. B. Lippincott Co. 1874.

"Aero-Therapeutics." By Charles Theodore Williams, M.D. Macmillan Co. 1894.

## Discussion.

### Remarks by E. O. Otis, M.D.

The oscillations of opinion and practice regarding the value and place of climate in the treatment of tuberculosis seem to me to be quite analogous to the varying opinions which have been held regarding the value of tuberculin. Both have had their apogee and perigee, their day of ascendency and their day of decline. There was a time, and for many years, when climate was considered the essential factor in any attempt to treat tuberculosis successfully. For example, at one time almost every well-to-do patient in this region who was able to take the journey was advised to go to Colorado, and Colorado Springs may be said to have been largely founded by consumptives, and supported by them, and very many cures were

attained even when the patients were in a more or less advanced stage, as most of them were, who were sent away. Now the pendulum has swung so far the other way that it seems almost archaic to discuss the subject of climate in relation to the treatment of tuberculosis. With many phthisio-therapeutists, perhaps with the majority, climatic treatment, in the sense in which it has been so well described this evening, is considered of little or no importance. Wherever, they say, pure air can be obtained, together with skilled supervision, there tuberculosis can be successfully treated.

"I can cure tuberculosis in any climate," Dettweiler once told me, as we were riding up to his sanatorium at Falkenstein, which was situated in a very indifferent climate. Experience has, indeed, shown that this is true; nevertheless it is an indubitable fact, and attested by a large amount of accumulated evidence extending over many years, and by the experience of such authorities as Williams, Knight, Solly, Bonney, McGahan and many others, that in the climate of many regions, particularly that of the Rocky Mountains and the great Southwest, at least certain consumptives do better and obtain an arrest of their disease which would be doubtful, if not impossible, in the so-called unfavorable climates. No one can read the cases cited by Bonney in his book on tuberculosis without the conviction that the climate of Colorado was an essential, if not *the* essential, factor in the favorable results he obtained in many of his cases. I recall cases which I believe would have never regained and maintained their health in the climate of this latitude. Granted, again, that the "cure" can be successfully carried out in any climate where the air is pure, one must admit that it can be effected with far more comfort and greater contentment in a favorable climate under constantly sunny skies than in the harsh changeable climate of northern latitudes.

Undoubtedly too much was expected of climate *per se*, just as in the case of tuberculin, and disappointment was bound to be the result in both cases. Again, much discredit was brought upon climatic treatment by what I should call the "consumptive tramp," who moved from resort to resort, never remaining long enough in one place to make the cure, or obtain any successful results.

Another cause in the lack of success in climatic treatment was the failure to appreciate the importance of constant skilled medical supervision. The tuberculous individual too often thought, and perhaps his physician did also, that if he only resided in the favorable climatic resort he could manage himself and do about as he pleased. Hence, many failures were bound to ensue. What, in my opinion, can be gained from a favorable climate, besides the first great essential of pure air, is

1. An increased amount of sunlight. "If sunlight is good at all," said Dr. Knight, "why isn't it better to have twenty-five or more days of it per month than to have ten or twelve or less?"

2. A low relative humidity — dryness of the air, which I have always felt was a valuable factor, on account, as has been observed, of its anti-catarrhal effects. Again, a moderately low, or low, temperature seems to be the most favorable for the average tuberculous individual, for it is a common observation that patients gain most in cold, dry weather. Here, however, there must be an individualization of the patient. Some find cold weather quite unbearable and suffer much from it. I recall the case of a patient who found the cold weather of Liberty, N. Y., most uncomfortable, but obtained comfort and equal benefit in the milder latitude of Aiken, S. C. As to altitude, as illustrated by such localities as Denver, Colorado Springs and others, we have no sufficient proof that, *per se*, altitude possesses any favorable effect other than the greater purity of the air and increased diathermacy and the general stimulating influence on metabolism, which influences are in themselves of great value; only, of course, it is to be remembered that not all cases are suitable for the climate of altitude.

In making a choice of climate for any case, all the individual conditions must be considered — the temperament, character, age, intelligence, pecuniary and domestic conditions and the general physical condition and local state of the lungs. In times past too many patients have been sent away, or have gone away, simply to die.

Again, it is presupposed that wherever the tuberculous individual goes, he is to be under the care and constant supervision of a physician skilled in the treatment of the disease. The majority of consumptives will always have to be treated in a climate near their homes, either in a sanatorium or at home. But for certain cases, and such as are well-to-do, I believe that climate still has an important place in the treatment of tuberculosis. There was no wiser or more experienced physician in the treatment of tuberculosis than the late lamented Dr. Knight, and I may be permitted in conclusion to quote a sentence or two from a paper of his upon "Climate as a Factor in the Treatment of Tuberculosis," which he read before the National Tuberculosis Association, and in which conservative opinion, based upon an extended and large experience, I heartily concur.

"There is no specific climate," he says, "any more than there is a specific medicine, for tuberculosis, but there is no ground for supposing that a tuberculous patient is exempt from the effects of weather conditions upon the individual in health; and if we admit that weather conditions have any effect, local or general, on the individual in health, then we must admit the possibility of utilizing this effect in treating morbid conditions of the body, tuberculosis included, and we must compare the possible effects of these elements as we find them at home, and as they may be found elsewhere, both upon the organs affected and upon the individual." . . . And, concluding, he says, "My own experience, both before and since the value of modern hygienic-dietetic treatment has been so generally recognized, has led me to continue in the belief that much is to be gained by the judicious selection of a patient's climate, or weather conditions, and we do not do our patients justice unless we consider the possible advantage of change when that is practicable."

REMARKS BY VINCENT Y. BOWDITCH, M.D.

Dr. Hinsdale has done well to come to us here, in the heart and home, as it were, of the advocates of home treatment for consumptives. His rich experience should help us to view the whole question with unprejudiced eyes and enable us to come to the *juste milieu* in our attitude of mind which is so desirable in all matters of discussion.

In spite of the fact that for the last twenty years I have been urging the necessity of establishing institutions near our homes, not only for the cure of incipient cases, but for the care of far-advanced, I have never been able to place myself in the ranks of those who, knowing how much more we can do near our homes than was thought possible two decades ago, believe, therefore, that every case of tuberculosis can be treated as well in New England as in distant climates. This has always seemed to me an extremist's view and one which is not in accordance with the results of my own experience.

Numerous examples of this fact come without effort

to my memory. Especially I recall one young man who was under my care for many months at the Rutland State Sanatorium. He was the despair of us all, for, in spite of closest care and adherence to accepted methods of treatment, he slowly and steadily lost ground until finally, quite discouraged, he decided to go to Colorado. He began almost immediately to improve there, held a position of trust in his profession soon afterwards, and returned for a visit two or three years later, the picture of health, the disease having been entirely arrested; and at last accounts he was a busy practitioner in Colorado and entirely convinced that it was the place for him.

Another case, a woman under my care at the Sharon Sanatorium years ago, steadily lost ground, but after several months finally left for Colorado Springs where she soon began to improve and lead an active life. An attempt to return was followed twice by a recurrence of symptoms, and a permanent residence in Colorado was then decided upon. She is now living there, earning her living in some light employment, the disease being quiescent, although not cured. Had she decided to remain here to fight out the battle, I cannot believe she would be alive now.

I could cite similar cases where I have tried to accomplish the desired result in New England, finally advising another climate with success. That the reverse may be the case is also quite true. I have had patients who, having gone to higher and more western regions, have returned to New England with consequent improvement in their symptoms. For this reason it is incomprehensible to me how the argument is used that because many patients undoubtedly improve and get well in some cases by using hygienic measures at home, all can follow the same course with equally good results without change. We must all recognize the usual tonic effect upon ourselves of a change to a mountainous region or even in going down to the sea. If, then, this is felt when in comparative health, why should we deny similar influences to our patients? It is a scientific fact, moreover, that high altitudes cause distinct circulatory changes and even alteration in the blood itself. As to the good or bad effect of such changes, that is another question involving the skill and judgment of the adviser, but it is folly, in my opinion, to say that there is no possible use in sending a patient away if he fails to improve near at home. It is a matter of experiment to find out what will best agree with any individual. Every case must be considered by itself. We may find that a certain climate has a beneficial effect upon ninety-nine cases out of a hundred; and for some inexplicable reason the hundredth, one of similar nature, will need quite different treatment. This is a point which should be always explained to a patient lest he go blindly forward adhering to one inflexible rule even when the first experiment has not been a success.

I am speaking now, of course, of suitable cases, that is, in which there is hope of cure. I cannot speak too strongly against the haphazard custom, now happily growing less frequent, it seems to me, of sending far-advanced cases to distant climates, especially where lack of funds deprives one of the essentials of life. Nothing can be more pitiable than the victims of such treatment. I remember well in a trip to California six or eight years ago that a man was found in the lavatory where he had died from exhaustion in an advanced stage of the disease on his way to seek health; and upon my return I helped to take care of a poor fellow just able to be taken back across the continent to his home which he never should have left. A few instances of this sort in one's experience, added to the urgent expostulation of the western physicians, are enough to convince one of the folly of such procedures.

I should much regret it if from my remarks it should be inferred that I believe less than formerly in sanatorium treatment near our homes. In an experience of twenty years my enthusiasm for it has only become more keen, even while recognizing its limitations. I only wish to emphasize the fact that in my experience there are many patients who will do better by making an entire change of climate provided the proper mental, physical and financial conditions are present.

Upon the salient points of Dr. Hinsdale's paper I am sure we agree.

## "COMMON COLDS."

BY JAMES A. HONEIJ, M.D.,

*Secretary of the Committee on Prevention of Disease, Boston Chamber of Commerce.*

THE present paper is the result of an investigation of the prevalence of common colds and the economic loss due to them, together with a study of the various types of colds, sources of infection, the vocations most affected and other facts of more or less interest and importance.

An attempt was made to estimate the number of "common colds" occurring in Boston for the period of six months from December, 1909, until June, 1910. This was done because it was believed that, apart from the medical importance, the economic loss due to common colds was greater than the average person realized. The investigation was started in the beginning of the last summer by having printed 15,000 cards like the form outlined here.

The information desired was the age, sex and occupation, whether the individual had had a cold during the last six months, and at what time and of what duration, whether he was absent from work, and, if so, for how long a period. Regarding the type of cold, whether head, throat, larynx or chest, although considered important, was expected to be only the patient's opinion, not an accurate diagnosis. Opinion, not scientific certainty, was also our hope concerning the source of infection or the manner in which the person contracted the cold.

The answer to the foregoing questions furnished the committee with sufficient facts to draw the conclusion that common colds are extremely prevalent and costly and that they are in all likelihood due to a common germ infection.

It is a matter of common observation that an individual in a household, or an employee closely associated with other employees in a single room and suffering from a cold, will, in a short space of time, in fact, often before the lapse of a week, infect all the members of his household or his companions in the workroom where he is employed. The popular idea is that colds like this are more often due to draughts of air or to the winter cold. In fact, so common is the idea that colds are due to cold air that a great proportion of people are inclined to exclude pure air and breathe impure, overdried, overheated air which depresses vitality and injures the surface membrane of the whole respiratory tract. Physicians

have found that the same laws of hygiene which tend to prevent tuberculosis also aid in preventing common colds. Members of Arctic expeditions have repeatedly recorded the fact that while exposed to great cold in polar regions they never have "colds." Only on returning to civilization and indoor life do "common colds" attack them. General Sherman noticed the same freedom from "colds" in his famous march to the sea. When his men were living constantly outdoors, and sleeping on the ground, they had no colds. But as soon as they touched civilization again colds appeared. Patients suffering from tuberculosis who naturally would seem more susceptible to changes and draughts of air are cured by sleeping with their windows open. Many cases in which a cough has been the prominent symptom before treatment have ceased to cough after being treated with fresh air. Pneumonia patients who at one time were protected from the air because of the supposed danger are now treated in the open air. Dr. Neff, of Philadelphia, makes the following statement in a circular issued by the Department of Health of which he is director: "Ventilation is the keynote of prevention from pneumonia, whether in office, public building, sitting room or bedroom. Day and night pure air should be breathed. The old superstition that the breathing of night air is conducive to disease has been eliminated from the minds of nearly all by public education, with the exception of a few of our foreign population, who still believe that some diseases are spread by the breathing of night air. As a matter of fact, the night air is purer than the day air, as there is less black smoke belching from chimney stacks and locomotives, and less dust in the air, owing to reduced street traffic, so windows should be opened both top and bottom in every sleeping room." We are, of course, here speaking of the acute infection of the membrane of the whole respiratory tract by bacteria.

Another popular idea and one which the committee hopes to disprove is that colds are due to insufficient clothing, to low or to thin shoes, to changes from hot to cold temperatures, or vice versa.

The statement so often made that an individual is subject to colds may well mean in many cases that the sufferer has not entirely freed himself from the original infection, or has subjected himself again and again to the impure air of his house or office, or has reinfected himself from another member of his family or from one of his fellow-workers before the cycle of infection has run out. In such cases the consequences frequently have been severe, if not serious. A cold may progress from the nose to the throat and lungs, and pneumonia and other serious diseases are apt to result. Acute inflammation of the inner ear and of the bony cavities of the forehead and cheek bone often results from a "common cold" and proves oftentimes a stubborn, serious and expensive malady.

Many cases of latent or healed consumption are in all probability "lighted up" into serious activity of the disease process by a common cold. The kidneys and the heart are now and then seriously affected by forms whose entrance by the throat and nose is marked by a "common cold."

Apart from the desire of the committee to obtain such information as would show that common colds are due to an infection, they hoped to show the enormous loss which must be associated with this common disease and so to interest employers to take steps towards lessening the spread of common colds, with their attending inconvenience, suffering and loss of time and money. If employers stopped to consider the possible economic loss in a business establishment employing thousands of persons if a serious epidemic of common colds breaks out, it would possibly mean that much better ventilation and better hygienic conditions would be given to employees and that every other means would be taken to make impossible the outbreak of such an epidemic.

### THE RESULT.

Of the 15,000 cards sent out, 4,230 were returned as follows: 1,633 cards were answered as positive cases, 1,318 cards were answered as negative cases, 36 cards were incompletely answered and 1,181 cards were returned not used, 10,000 were not returned. We have then 3,013 cards returned as either positive or negative. Figures were also obtained from the fire and police departments, from prisons, hospitals, factories and departments stores without the use of cards. From these sources 2,212 positive cases were reported out of approximately 3,500 persons, which, added to the 1,633 positive cards, makes a total of 3,845 individuals who have had colds during some time of the period studied, that is, from December to June. If we include the persons in the family affected with colds, the total is increased to 6,591. For the purpose, however, of a more careful study we can take only the 1,633 cases of colds which were obtained by cards.

We will consider chiefly the following professions, trades and occupations: Clergymen, 41; conductors, 107; dentists, 79; educators, 98; housewives, 64; lawyers, 96; manufacturers, 46; merchants, 114; motormen, 76; nurses, 22; office occupations, 107; physicians, 100; post-office employees, 66; department store employees, 275; total, 1,291.

This does not include 342 positive cases which were grouped under miscellaneous occupations, 63 policemen, 60 firemen and 120 prisoners. Figures obtained from street laborers, students, etc., were not reliable, due to evident ignorance and lack of serious consideration. From other trades, cards were obtained, but in such small numbers that no accurate conclusions could be reached.

It has been suggested that the figures shown here are of early middle life. Students and others below the age of twenty years have a comparatively less economic value than the trades and

TABLE I.

SHOWING AGES AT WHICH MOST COLDS OCCURRED.

| | 10-20. | 20-30. | 30-40. | 40-50. | 50-60. | 60-70. |
|---|---|---|---|---|---|---|
| Clergymen, | | 1 | 11 | 14 | 8 | 6 |
| Conductors, | 4 | 72 | 21 | 4 | 6 | |
| Dentists, | | 6 | 30 | 25 | 13 | 5 |
| Educators, | | 9 | 30 | 32 | 19 | 8 |
| Housewives, | | 8 | 35 | 8 | 8 | 4 |
| Lawyers, | | 11 | 39 | 26 | 10 | 8 |
| Manufacturers, | | 3 | 7 | 27 | 8 | 1 |
| Merchants, | | 3 | 20 | 24 | 41 | 25 |
| Motormen, | | 30 | 21 | 13 | 12 | |
| Nurses, | | 3 | 12 | 3 | 3 | |
| Office occupations, | | 6 | 24 | 39 | 24 | 12 |
| Physicians, | | 4 | 30 | 29 | 18 | 17 |
| Postmen, | | 14 | 27 | 11 | 12 | |
| Department store employees, | 100 | 124 | 39 | 9 | 3 | |
| | 104 | 294 | 346 | 264 | 185 | 86 |
| Total, | | | | | | 1,279 |

professions represented here. It has also not been proved that individuals below the age of twenty and above sixty years suffer more from colds than individuals between the ages of twenty and sixty years of age. Ages not given for twelve others makes the total of 1,291. Firemen's and policemen's ages not obtained.

In the fourteen occupations given, we find that the month during which most colds occurred was March. Postmen, however, were an exception to this rule, their colds occurring mostly in January and May. February and April each give about the same proportion of colds and considerably less than March. Just why March should be the severest month, if we consider colds from a bacterial point of view, is difficult to explain. If we consider March a windy and a thawing month, and that the vitality of the individual is possibly lowest after a winter of indoor life and desiccated air, we may then find some clue.

With physicians, dentists and teachers there is, of course, the risk of becoming infected from their patients or scholars and of the likelihood of breathing impure, bacteria-laden air and, of course, the same predisposing causes as mentioned above.

Among 1,291 individuals, there were 568 absent from work with a total number of 3,913 days lost from work, or 6+ days per individual.

A study of the following table will aid in understanding this.

Of the number of days lost in the different occupations, merchants average 10+; motormen, 9+, lawyers, 9+, nurses, 8+, educators, 7+, department store employees, 6+, physicians, office occupations and conductors, each 6+, clergymen and postmen, each 5+, manufacturers and housewives, each 4+, and dentists only 2+days.

The figures quoted above are modified somewhat when we consider the greater independence of occupation of those near the head of the list, with the exception of motormen. The high average absence from work of merchants and lawyers is not necessarily a proof of the severity of their colds, but, as stated, is due rather to their greater independence of occupation and

TABLE II.

SHOWING THE TOTAL NUMBER OF DAYS LOST FOR EACH PROFESSION BY ABSENCE FROM WORK AND AVERAGE PER INDIVIDUAL AND APPROXIMATE INDIVIDUAL AND TOTAL MONEY LOSS. RECKONED FOR 568 INDIVIDUALS.

| | No. with colds. | No. absent. | Total number days. | Average number days. | Approximate loss per individual. | Approximate total loss. | Approximate average earning capacity for 365 days. | Average per day. |
|---|---|---|---|---|---|---|---|---|
| Clergymen, | 41 | 12 | 67 | 5.58+ | $38.24 | $458.90 | $2,500.00 | $6.84+ |
| Conductors, | 107 | 47 | 322 | 6.85+ | 11.26 | 529.30 | 600.00 | 1.64+ |
| Dentists, | 79 | 11 | 31 | 2.81+ | 11.58 | 127.39 | 1,500.00 | 4.10+ |
| Educators, | 98 | 26 | 185 | 7.11+ | 29.24 | 760.25 | 1,500.00 | 4.10+ |
| Firemen, | ? | 60 | 309 | 5.15+ | 14.09 | 845.86 | 1,000.00 | 2.73+ |
| Housewives, | 64 | 7 | 28 | 4.00+ | 6.57 | 46.02 | 600.00 | 1.64+ |
| Lawyers, | 96 | 20 | 182 | 9.1 + | 49.86 | 997.25 | 2,000.00 | 5.47+ |
| Manufacturers, | 46 | 12 | 57 | 4.75+ | 39.04 | 468.48 | 3,000.00 | 8.21+ |
| Merchants, | 114 | 24 | 260 | 1.08+ | 89.04 | 2,136.96 | 3,000.00 | 8.21+ |
| Motormen, | 76 | 41 | 379 | 9.24+ | 17.72 | 726.61 | 700.00 | 1.91+ |
| Nurses, | 22 | 4 | 32 | 8.00+ | 17.53 | 70.13 | 800.00 | 2.19+ |
| Office occupants, | 107 | 23 | 141 | 6.13+ | 50.38 | 1,158.89 | 3,000.00 | 8.21+ |
| Physicians, | 100 | 21 | 140 | 6.66+ | 36.52 | 767.11 | 2,000.00 | 5.47+ |
| Policemen,* | ? | 63 | 565 | 8.96+ | 14.74 | 928.74 | 1,200.00 | 1.64+ |
| Postmen, | 66 | 60 | 306 | 5.1 + | 13.97 | 838.34 | 1,000.00 | 2.73+ |
| Department store employees, | 275 | 137 | 909 | 6.63+ | 9.08 | 1,245.14 | 500.00 | 1.36+ |
| Total, | 1,291 | 568 | 3,913 | 6.00+ | | $12,105.37 | | $4.16+ |

Total average loss for 568 individuals is $21 + per individual for period of six months.

* Policemen when absent lose half pay only.

consequently greater length of time in which to recuperate. With motormen and nurses, who show a high percentage, their hard and tiring occupation and perhaps their greater exposure to infection may offer some explanation.

Dentists, on the other hand, show the lowest average, which perhaps can be explained in some degree by their more equable condition of occupation and the care they naturally take to prevent infection of any kind. Policemen, who are in the open air a good deal of the time, and whose occupation is relatively similar to that of postmen and firemen, are absent from work a greater number of days than either of the two latter occupations. *The large number of employees in department stores who show a serious and high percentage of absence from work, — about 50% of the total number having colds, — becomes worthy of consideration.*

The total number of individuals which we are considering, 3,485 had colds for 11,417 days. This does not include the number of days out of work. If we include the number of days absent from work, we have a total of 15,420 days of colds.

The next point to consider is the form of cold from which most individuals suffered. By far the greater number were said to be entirely head colds — about 40%; head and throat, 15%; throat colds, 12%; chest and head, 5%; head, throat, larynx and chest, about 5% and other forms in still smaller proportion.

Probably the most important point is the involvement of the throat, which is considered a sequel of a cold from the head. This is all the more important when we take note of the fact that infantile paralysis is now considered to be a possible result of infection through the nose and throat. Just how much we can depend upon the diagnosis which each individual makes of the extent of his own cold, it is difficult to estimate.

The answers regarding the source of infection, or, as we stated it on the cards, "Where and how did you get it?" are perhaps only of importance to demonstrate the prevailing opinions.

The occupation of each individual, of course, naturally furnishes the most apparent cause for his cold. Department store employees, almost without exception, blame draughts for their colds, and motormen and conductors the fact of their getting wet. The cause given by the most number of individuals in all occupations together was draughts. Infection as a cause for colds was given mostly by the professional men and educators; the percentage of the whole number was only 7. Getting wet was the next most common cause assigned. This was given in about 5% of the cases.

When we consider that 10% of the total number of persons were either physicians or dentists, it is clear that infection as a recognized cause of common colds is not yet widely accepted.

"Subject to colds" is the statement of 23% of the total of 1,633. This probably signifies poor nutrition, poor working conditions, reinfection or ignorance of the value of fresh air. It would be necessary further to investigate this large percentage to find out just what their attitude towards fresh air, draughts, etc., is, and under what conditions they are working, if we wish to make these figures of any value.

The last question we have to consider is what number of persons were infected with a cold as a result of its spread in families. Two thousand seven hundred and fifteen such persons were reported out of approximately 3,000 households. This number, added to the 1,633 positive cases, makes a total of 4,348 individuals who had colds for the period covered.

The usual stages of a common cold after the onset are congestion of the respiratory organs, with watery serum becoming mucopurulent, some fever and a general feeling of discomfort. Colds may then extend to the bronchi or lungs. "The first suspicion on the part of the patient that he has such a cold starts from an irritation or sensation in some spot, often the nasopharynx, occasionally the larynx, nose or tonsil. During the next few hours this irritation extends to neighboring regions, and this continues perhaps for a few days, but the amount of its extension varies in different cases. It may involve by direct extension the nose, the accessory sinuses, the pharynx, the larynx, the trachea and the bronchi, but it may spare any of these parts. The local appearances are in most cases less marked than the severity of the symptoms would suggest. There is an increase in redness of the mucous membrane involved, and other signs of inflammation, generally of a mild type."[1]

According to bacteriological investigations, a number of different forms of bacteria may be present, and whether these bacteria are the cause is still the question. In many colds the discharges are sterile. But this may mean only that the bacteria are not to be starved by our present methods and will not grow on one ordinary culture media. The investigations of Dr. F. C. Cobb[2] show that the interior of the nose ("*downstream*" in the air current) *is sterile* in health and often in disease, although the front of the nose (upstream in the air current) contains great variety and numbers of bacteria. It would seem probable that the fluids or surface cells of the nose must have a bactericidal power and this power must be somehow inhibited or overcome when we "catch cold." If a single specific organism were found regularly in all cases, or if this organism regularly exceeded in numbers all other forms, or, still more, if any one of these organisms when experimentally injected into the tissues produced the symptoms of a common cold, then we could definitely state its cause. These individual organisms may produce slightly different types of colds and, if so, can probably only be determined by a careful clinical study of hundreds of cases, with an especially careful microscopical study of the bacteria. There seems to be no question that infection plays as important a part in colds as it does in diphtheria or influenza.

Infectious colds must not be confused with

[1] A. Coolidge, Jr.: Boston Med. and Surg. Jour., vol. clxiii, 1910.
[2] F. C. Cobb: Transactions of the Congress of American Physicians and Surgeons, vol. viii, 1910.

colds of a vasomotor nature or chronic catarrhal conditions, or, as Dr. Coolidge states, "that of acute disorders of the nasal chambers, some may be distinguished either as due to infection and others as arising from a local irritability and vasomotor disturbance." Infectious colds are those caused by bacteria; irritation colds are those caused by the pollen of plants, draughts, acrid vapors or abnormal conditions of the membranes.

One very apparent fact derived from the literature is that many factors predispose and coexist with colds, but this is also true of a great many diseases with which we are now more careful than we are with colds, for few really deny that acute colds are contagious. Of the various theories that have been given previous to that of infection, those of Rosenthal, Seit and others may be mentioned. *Rosenthal* believes in a vasomotor change; the chilling of the surface with the contraction of peripheral capillaries, which results in a congestion of the internal organs through blood being driven from the skin surface. The theory of *Seit* differs slightly in that he thinks the vasomotor centers are excited by the sensation of a chilled skin with resultant congestion at points of least resistance. *Brown*[3] also believes in vasomotor changes, combined with the theory that the nose plays an important part, being, as it were, a respiratory filter for moist and heated air, and that there is a close relation between the functions of the skin and that of the nose. He also states that the predisposition to colds is increased when the body is first overheated or overprotected and then chilled or under protected. The turbinates, he supposes, receive the vasomotor impulses when the body becomes chilled. *Wakefield* believes that colds produce areas of suboxidation which become inflammatory foci. *Bosworth*[4] thinks that the function of heat production is involved in that after a chill a part of the body becomes inactive while another part of the body is still active. *Allen*[5] is definite in his statement that colds are due to infections by bacteria, and, after determining the predominant bacteria, treats the cold with vaccines.

*Grayson*,[6] referring to all types of acute rhinitis, says that they have a common predisposing cause, that of chronic catarrhal rhinitis. He also goes on to say that in the physically degenerate there are so many spots of enfeebled resistance that a severe chill would result in a serious effect. Excluding all mention of bacteria, he states that in a normal man with sound tissues, exposure would result in a transient congestion of the internal structures with resulting rise of temperature. This would continue only so long as to enable vascular inhibitory mechanism to reassert its control and dissipate gathering trouble.

The difficulty, however, appears to be largely in the correct diagnosis of a cold. Diphtheria, vasomotor rhinitis and hay fever are no longer called colds. With a closer and more careful study of typical colds, and with keener observation of the period of onset, there may result the finding of a specific organism which will explain the cause of the most common forms.

It does not follow that because bacteria and not draughts are probably the "cause" of colds, we should neglect the other essential facts of under-nourishment and bad hygiene. We must remember that all infections are more serious if the patient has been neglecting his health and strength. And we believe that by sensible hygienic measures we can to a large degree prevent colds, especially through a more intelligent attitude on the part of the public and a more progressive campaign on the part of the medical profession. If plenty of pure air is allowed to enter the patient's room, if he is isolated for forty-eight hours or more and not allowed to go to business, or in the case of children, to school, much time and money will be saved.

TABLE III.

SHOWING AVERAGE AND TOTAL LOSS FOR INDIVIDUAL PROFESSIONS, TRADES, ETC., FOR INEFFICIENCY DUE TO COMMON COLDS. RECKONED ON A TEN PER CENT BASIS.

| | No. with colds. | Number of days with colds. | Average loss. | Total loss. |
|---|---|---|---|---|
| Clergymen, | 41 | 338 | $5.39 | $221.19 |
| Conductors, | 107 | 398 | .61 | 65.27 |
| Dentists, | 79 | 890 | 4.60 | 364.09 |
| Educators, | 98 | 720 | 3.00 | 295.02 |
| Housewives, | 64 | 432 | 1.10 | 70.84 |
| Lawyers, | 96 | 705 | 4.01 | 385.63 |
| Manufacturers, | 46 | 320 | 5.71 | 262.72 |
| Merchants, | 114 | 817 | 5.88 | 670.75 |
| Motormen, | 76 | 190 | .47 | 36.29 |
| Nurses, | 22 | 183 | 1.38 | 40.47 |
| Office occupations, | 107 | 789 | 6.05 | 647.76 |
| Physicians, | 100 | 920 | 5.03 | 503.24 |
| Department store employees, | 275 | 1,495 | .73 | 203.32 |
| Totals, | 1,225 | 8,197 | | $3,766.59 |

There were no figures for firemen, policemen and postmen. The figures are estimated from the earning capacity as given on Table II.

Inasmuch as this investigation was undertaken to consider the infectious form of common colds, which we believe can be largely averted or prevented, I desire to call attention in conclusion to the economic loss which we suffer from this source. According to Table II, we see that the total loss for the six months was $12,105.37. This, when divided amongst the 568 individuals who were absent from work, makes an average loss per individual of $21+ for six months. (See Table II.)

If we consider the loss of efficiency or earning power due to common colds in those who do not give up work and estimate this loss at the conservative figure of 10%, we find a total loss of $3,766.59 for 1,225 individuals.

SUMMARY.

1. Over half the population have colds during the course of the six months.

2. One fifth of the population are absent from work on account of colds.

3. The average loss of time of 568 individuals was 6+days per six months.

[3] Robert C. Brown: Med. Rec., 1909.
[4] Bosworth: Diseases of the Nose and Throat.
[5] R. W. Allen: Lancet, 1908.
[6] C. P. Grayson: Therap. Gaz., 1909.

TABLE IV.

Estimated Loss Due to Common Colds in Boston in Certain Occupations.

| | No. in Boston.* | Percentage with colds. | | No. with colds. | Average loss. | Total loss. |
|---|---|---|---|---|---|---|
| Clergymen, | 879 | 70 + | or | 614 | $5.39 | $3,309.46 |
| Dentists, | 467 | 45 + | or | 210 | 4.60 | 966.00 |
| Educators, | 3,733 | 64 + | or | 2,389 | 3.00 | 7,167.00 |
| Lawyers, | 1,311 | 64 + | or | 839 | 4.01 | 3,364.39 |
| Manufacturers, | 1,849 | 48 + | or | 887 | 5.71 | 5,064.77 |
| Merchants, | 9,867 | 57 + | or | 5,624 | 5.88 | 33,069.12 |
| Physicians, | 1,972 | 49 + | or | 966 | 5.03 | 4,858.98 |
| Department store employees, | 18,083 | 47 + | or | 8,499 | 0.73 | 6,204.27 |
| Totals, | 38,160 | | | 20,028 | | $64,003.99 |

* The figures in the first column were obtained from the Massachusetts census of 1905.

4. The average loss of money was $21 + per six months, not including individual expenditures for medical treatment, etc.

5. The total loss in six months' time was $12,105.37 for 568 individuals.

6. In addition to this there is a loss of energy, equivalent to $3 + per six months per person.

OTHER DATA.

1. The most common cold is the "head cold."

2. Most colds occur in the month of March.

3. Individuals from thirty to forty years of age suffer most from colds. Department store employees suffer most in proportion. Half of them lose time on account of colds.

CONCLUSIONS.

1. Preventive methods are essential in dealing with common colds. Better working conditions, pure air, even temperature, proper ventilation and the proper amount of humidity are important factors. Nourishment, general hygiene and proper clothing are necessary precautions as in guarding against all other disease.

2. After the onset of a cold, proper diagnosis is essential to ascertain whether the cold is infectious.

3. Individuals suffering from infectious colds should be isolated.

I desire to thank my committee for the privilege they have granted me to publish this work.

## AN ANALYSIS OF FORTY-SIX CASES OF PROSTATECTOMY.

BY LINCOLN DAVIS, M.D., BOSTON.

### Abstracts of Cases.

PERINEAL PROSTATECTOMY FOR BENIGN ENLARGEMENT.

(Continued from No. 16, p. 571.)

Case 42. J. F. F., No. 171829. E. S. Age, seventy-six years. Widower. Retired. Entered hospital Sept. 8, 1910. Service of Dr. Brooks.

*History.* — Denies venereal. Previous health good. One year ago began to have frequency, rising ten to twelve times at night. Two days ago, retention. To-day his physician unable to pass a catheter and sent him to the hospital.

*Examination.* — Well developed and nourished. One eye enucleated, result of accident. Systolic murmur. Arteries palpable, high tension pulse. Distended bladder felt half way to umbilicus. Rectal examination, prostate smooth, hard, symmetrically enlarged. Coudé catheter passed, 32 oz. of urine evacuated. Constant drainage.

*Urine* smoky, alkaline, 1011, albumen slight trace, sugar 0, sediment, numerous red cells, leucocytes and squamous cells.

*Cystoscopy.* — No note.

*Operation*, Sept. 12, 1910, spinal anesthesia, perineal prostatectomy. Large lateral lobes shelled out. No median lobe. Usual drainage.

*Pathological report.* — Glandular hypertrophy.

*Convalescence.* — Tubes and wicks out in forty-eight hours with immediate interval urination through wound. Convalescence uneventful except for severe pain in side. Pleurisy? Oct. 6, passed small amount of urine through penile urethra for first time. Sound 29 passed to bladder. Residual urine, 8 oz. Discharged to local doctor twenty-fourth day, most of urine coming through wound.

*Subsequent history.* — Nov. 21, 1910, personal examination. Has not passed a drop of urine except through sinus since leaving hospital, has poor control, urine leaking away from him by day and night. Passed 3 oz. dark turbid urine through sinus. With much difficulty a small bougie catheter was finally passed, residual 2 drams. Right epididymitis which developed after leaving the hospital. After the passage of sounds there was no further leakage from sinus. Control improved. Epididymitis subsided.

Jan. 16, 1911, perineal sinus has healed. Passes urine once an hour at night, but has no leakage. Holds urine two hours during the day, occasionally a little urine gets away from him when on his feet. Examination: Passes urine in good stream. Residual 1 dram. Urine clear. Clothes perfectly dry, no evidence of lack of control. Principal complaint is pain in side and shortness of breath.

Case 43. J. B., No. 172045. E. S. Age, eighty-eight years. Widower. Sea captain. Entered hospital Sept. 20, 1910. Service of Dr. Brooks.

*History.* — No venereal. Typhoid fever fifty years ago. Heavy cough for five weeks, shortness of breath, and edema of feet. For ten years has had difficulty in starting urination. Last summer retention requiring catheterization. During last week has been unable to void, catheterized by local doctor. Catheterization difficult and painful.

*Examination.* — Well developed and nourished. Tongue clean, mind clear. Lungs, wheezy respiration. Mitral systolic murmur. Arteries tortuous and palpable. Bladder distended half way to umbilicus. Rectal examination, prostate enlarged, firm, symmetrical.

*Urine.* — Pale, acid, 1006, albumen slight trace, sugar 0, sediment, much pus, some blood, granular casts.

*Cystoscopy.* — No note.

*Operation.* — Sept. 22, spinal anesthesia, perineal prostatectomy. Lateral lobes shelled out, no median tissue. Usual drainage.

*Pathological report.* — Glandular hypertrophy.

*Convalescence.* — Sept. 23, patient delirious, impossible to keep irrigation apparatus working. Special nurse. Sept. 24, patient irrational, temperature elevated, gets out of bed. Sept. 28, improving, taking nourishment better. Oct. 6, epididymitis. Oct. 10, bleeding started from wound. Bladder distended, catheterized and catheter tied in. Oct. 15, abscess of testicle incised with escape of pus, considerable relief. Oct. 25, beginning to pass urine through penile urethra. Still a little bleeding from wound. Nov. 2, patient much improved, walking about, no bleeding. Nov. 19, wound has gradually closed in until it leaks now almost none. Sound 28 passed to bladder. Residual urine none. Walks about quite actively. Discharged fifty-seventh day.

*Subsequent history.* — Dec. 19, 1910, telephone report from physician. Patient has perfect control during day, at night urine sometimes gets away from him. There is still a small sinus in perineum the size of a knitting needle. General condition excellent.

April 7, 1911. Physician reports that patient is in excellent condition. Sinus has healed, no leakage. Goes out daily.

CASE 44. D. S., No. 172088. W. S. Age, seventy-six years. Widower. Farmer. Entered hospital Sept. 22, 1910. Service of Dr. Balch.

*History.* — No venereal. Has been troubled with moderate frequency for several months, four or six times in day, two times at night. Last week unable to void and has been catheterized regularly by physician since.

*Examination.* — Rather shaky old man. Marked arcus senilis. Tongue, brown coat. Heart and lungs negative. By rectum prostate symmetrically enlarged, firm, moderately tender.

*Urine.* — Acid, 1014, albumen 0, sugar 0, urea 19.1 gm. in twenty-four hours.

*Operation.* — Sept. 21, 1910, anesthol, perineal prostatectomy. Two lateral lobes removed, no third lobe. On account of persistent oozing three wicks were necessary.

*Pathological report.* — Glandular hypertrophy with retention cysts.

*Convalescence.* — Good recovery from anesthetic. Posterior wick out in twenty-four hours, lateral in forty-eight hours. Uneventful recovery. Oct. 12, good control, but most of urine comes through wound. Oct. 14, discharged to Out-Patient Department, seventeenth day.

*Subsequent history.* — Out-Patient Department note, Dec. 5, 1910: No leakage from wound which is closed. Residual, 1 oz., urine cloudy. Frequency, diurnal 4–5, nocturnal 2–3. Perfect control.

CASE 45. D. H. F., No. 173841. E. S. Age, sixty years. Married. Farmer. Entered hospital Jan. 7, 1911. Service of Dr. Harrington.

*History.* — Denies venereal. No previous sickness. About two years ago began to have frequency of micturition. One year ago had retention requiring catheterization. Ever since has depended entirely on the catheter. One month ago had an abscess which broke in the perineum.

*Examination.* — Fairly developed and nourished. Systolic murmur at apex. Lungs normal. By rectum prostate moderately enlarged, elastic, symmetrical.

*Urine.* — Foul, acid, 1020, albumen 0, quantity varied from 40–50 oz. daily.

*Cystoscopy.* — Bladder slightly trabeculated, moderate lateral projection of lobes with small median bar, no stone.

*Operation,* Jan. 12, spinal anesthesia, perineal prostatectomy. Two small lateral lobes removed. Digital exploration showed median bar to amount to nothing.

*Pathological report.* — Glandular hypertrophy.

*Convalescence.* — Very little bleeding. Temperature up to 102. Patient very drowsy. Tube out in forty-eight hours, interval urination through wound. Considerable diarrhea between sixth and ninth days. Tenth day patient up and about, feels well. Temperature normal. Jan. 25, temperature 105, some cough and dyspnea. Pneumonia, two lower lobes right side, severe pain in chest. Jan. 27, seems better, more comfortable, passing good quantity of urine through penis. Pneumonia seems to be subsiding. Feb. 3, in a sudden access of delirium, jumped out of window into snow. Carried into ward in a state of collapse, reacted to stimulation. Feb. 5, signs of fluid in right chest, aspirated, pus obtained. Under cocaine tube inserted between eighth and ninth ribs in scapular line. Two quarts of pus withdrawn. Pleural cavity aspirated twice daily through tube, dressing kept air tight. Patient gradually failed, the left lung filling with edema and râles. Death occurred Feb. 12, thirty-first day.

*Autopsy* showed unexpanded right lung covered with fibrinous exudate, pleural cavity well drained. Bronchopneumonia left lung. Kidneys and bladder not remarkable. Small unhealed sinus leading to prostate, the shell of which remained with a tiny median lobule. No evidence of infection.

Cause of death purely pulmonary.

### SUPRAPUBIC PROSTATECTOMY FOR BENIGN ENLARGEMENT.

CASE 1. A. M., No. 146448. E. S. Age, fifty-nine years. Married. Shoemaker. Entered hospital Feb. 16, 1906. Service of Dr. Elliott.

*History.* — After two years of intermittent hematuria was operated in December, 1904. L. D. Suprapubic cystotomy, excision of papilloma. Hematuria recurred in eight months. Cystoscope showed an irregular prostatic contour which was regarded as malignant and thought to be cause of bleeding. Some symptoms of cystitis, but none of obstruction. By rectum, prostate felt hard and dense.

*Operation,* Feb. 19, 1906, suprapubic cystotomy. No papillomata to be seen, prostate projects moderately into bladder; considered cause of bleeding. Removed *in toto* by finger enucleation.

*Pathological report.* — Simple hypertrophy.

*Convalescence.* — Uneventful except for left-sided epididymitis. Wound closed in one month. Discharged March 28, thirty-seventh day.

*Subsequent history.* — Hematuria recurred at the end of three months and at this time the cystoscope showed tiny papillomata scattered over the whole bladder mucous membrane. There was no trouble with micturition. No residual urine. Patient refused operation. Died of the disease March 21, 1910.

CASE 4. T. R. P., No. 153656. E. S. Age, sixty-seven years. Widower. Farmer. Entered hospital July 1, 1907. Service of Dr. Brooks.

*History.* — No venereal. For six months, pain and frequency. Urinates twelve times in the day, and six at night. Some difficulty in starting, some dribbling. No retention.

*Examination.* — Residual, 3 oz., turbid. Bladder holds 13 oz. By rectum, prostate does not feel enlarged.

*Cystoscopy.* — No note.

*Operation,* July 5, suprapubic prostatectomy. Median lobe size of thumb projecting into bladder. Moder-

ate sized lateral lobes enucleated with very little bleeding. Tube drainage.

*Pathological report.* — Hypertrophy.

*Convalescence.* — July 11, tube out. July 26, normal urination, wound closed, feels well. July 28, discharged, twenty-third day.

*Subsequent history.* — Letter of Sept. 16, 1907, states "should not know I ever had any trouble; your operation was a complete success."

January, 1911, reported by a friend and neighbor, also a prostatic, as being alive and well.

CASE 5. G. E. H., No. 154026. E. S. Age, sixty-nine years. Married. Business. Entered hospital July 24, 1907. Service of Dr. Brooks.

*History.* — Litholopaxy October, 1892, at Massachusetts General Hospital. In 1902 had suprapubic cystotomy with excision of third lobe. No relief from operation. Has used catheter entirely since operation. During last year has had frequent attacks of hematuria. Has led a catheter life for fourteen years. One week ago severe attack of bleeding from the bladder. Catheterization painful and difficult.

*Examination.* — Fairly well developed and nourished. Signs of old pleurisy in left chest. Bullet wound of leg.

*Urine*, foul and bloody.

*Operation*, July 25, suprapubic prostatectomy. L. D. Prostate projected into bladder size of tennis ball. Readily shelled out. Tube drainage. Some bleeding. Gauze packing.

*Pathological report.* — Weight of tissue removed, 130 gm. Chronic cystic hypertrophy.

*Convalescence.* — Patient mildly uremic and somnolent. Aug. 12, patient passed urine for the first time in fifteen years. Patient passed fragments of calcified matter. Urination voluntary and easy. Aug. 16, discharged, twenty-second day. Wound closed.

*Subsequent history.* — Office note: General condition excellent. Wound solid. Passes large quantity of urine at night, rises four or five times, can pass 12 oz. at a time. Urine cloudy, acid, albumen slight trace. Residual, 1½ oz. Ready to go to work. Has erections. Letter from widow stating that patient died of pneumonia three months later.

CASE 6. C. W., No. 154557. Age, sixty-eight years. Married. Carpenter. Entered hospital Aug. 28, 1907. Service of Dr. Brooks.

*History.* — For past year has had frequency. Retention for three or four weeks. Catheterized himself with home-made rattan catheter.

*Examination.* — Well developed and nourished. Double inguinal hernia. Sixteen ounces of urine obtained by catheter. By rectum, firm, symmetrical, bilateral enlargement of prostate.

*Operation*, Aug. 29, suprapubic prostatectomy. Large middle lobe, whole gland enucleated entire. Considerable bleeding. Tube drainage with gauze packing.

*Pathological report.* — Chronic fibrous hypertrophy.

*Convalescence.* — Continuous and profuse bleeding for two weeks which all efforts failed to stop. Double epididymitis. Bleeding finally stopped spontaneously. Discharged Oct. 14, forth-sixth day. Wound healed. Natural urination.

*Subsequent history.* — Letter, Oct. 17, 1908, reports that he is enjoying the best of health.

CASE 8. J. F. H., No. 157351. E. S. Age, sixty-two years. Teacher. Entered hospital March, 1908. Service of Dr. Scudder.

*History.* — Gonorrhea and syphilis thirty years ago. Used to be a heavy drinker, does not drink now. For ten years has had frequent micturition and incontinence. Has worn urinal for past six months. Passes urine from fifteen to thirty times at night. Lately has been troubled with shortness of breath.

*Examination.* — Poorly developed, emaciated. Mind somewhat clouded. Arteries sclerotic; pulse, high tension. By rectum, prostate hard, firm, sclerotic. Residual urine, 18 oz.

*Urine.* — March 9: Total quantity, 50 oz., pale, acid, 1006, albumen 0. Total urea, 7.65 gm.; total solids, 13.98 gm.

*Cystoscopy.* — Bladder wall markedly trabeculated, intravesical bilateral enlargement with deep commissures above and below.

*Operation*, March 10, 1908, suprapubic prostatectomy. Prostate enucleated with difficulty, small and fibrous. Tube and urethral drainage.

*Pathological report.* — Fibrous hypertrophy.

*Convalescence.* — Patient took nourishment poorly after operation. Irrational and gradually failed and died March 19, ninth day. No bleeding. Temperature and pulse did not rise. Forty ounces or more of urine excreted daily, low specific gravity.

*Autopsy* showed hydronephrosis and chronic interstitial nephritis, arteriosclerosis, obsolete tuberculosis of apex of lung.

CASE 9. W. T., No. 157342. W. S. Age, forty-two years. Married. Glass packer. Entered hospital March 6, 1908. Service of Dr. Mixter.

*History.* — Gonorrhea eighteen years previously. Six weeks ago noticed urine was bloody. No pain or difficulty in urination. This was followed by frequency of urination. He was then catheterized twice daily by his physician. One previous attack of hematuria in November.

*Examination.* — Well developed and nourished young man. Anemic. By rectum, prostate markedly enlarged and hard, projects considerably into the rectum; the top of it can barely be reached with the finger. Residual not recorded.

*Urine* turbid, alkaline, albumen trace.

*Cystoscopy* showed a large pedunculated tumor partly smooth and partly villous, intimately connected with the prostate, thought to be malignant.

*Operation*, March 13, 1908, transperitoneal cystotomy, prostatectomy. Pedunculated tumor found springing from within the prostatic urethra. Tumor excised at pedicle and prostate shelled out entire. Peritoneal cavity which had been protected with gauze pads closed. Bladder closed with suprapubic drainage and tube. One gauze wick packed into prostatic bed on account of bleeding.

*Pathological report.* — Papillary cystadenoma of prostate.

*Convalescence.* — Uneventful except for epididymitis. Discharged April 16, thirty-fourth day. Wound healed, passing urine without difficulty.

*Subsequent history.* — One year later reported for examination. Feels perfectly well, urine clear. No urinary symptoms. Rises occasionally once at night. Residual not measured, some atrophy of right testicle since operation. Sexual power retained.

CASE 11. M. F. L., No. 159165. E. S. Age, sixty-four years. Married. Entered hospital July 6, 1908. Service of Dr. Brooks.

*History.* — About two years ago began to have trouble in passing water, difficulty in starting. Smarting and frequency. Rises four or five times at night. Feet and ankles have been swollen.

*Examination.* — Old man, rather feeble in appearance and behavior. Bladder distended nearly to umbilicus. Arteriosclerosis, edema of feet. By rectum, prostate size of an orange, tender. English web catheter passed with difficulty and tied in. Patient had chill and temperature of 104 that night. Leucocyte count, 30,000.

*Cystoscopy*, July 10. Bladder wall trabeculated, prostate not markedly enlarged intravesically.

*Urine* varied in twenty-four-hour amount from 35–65 oz. Urea, 14.5 to 24.75 gm. Alkaline, specific gravity 1012.

*Operation*, July 16, suprapubic prostatectomy. Prostate smaller than expected. Enucleated with difficulty, some hemorrhage. Tube drainage and seepage for twenty-four hours.

*Pathological report.* — Diffuse hypertrophy.

July 17, seepage very bloody. July 18, patient uremic, hiccoughing. July 19, patient became delirious and failed rapidly and died third day, probably of combination of uremia and hemorrhage in spite of energetic stimulation and infusion.

CASE 37. S. R., No. 170519. E. S. Age, sixty-three years. Married. Farmer. Entered hospital June 24, 1910. Service of Dr. Brooks.

*History.* — March, 1910, had a perineal operation done on another service. Lateral lobes were shelled out, median bar left. Patient had lived a catheter life for five years. Was unrelieved by the operation, having to use catheter entirely since discharge.

*Examination.* — Well developed and nourished. Somewhat obese, some edema of legs. Slight amount of prostatic tissue can be felt by rectum. Unable to pass any urine.

*Urine* cloudy, alkaline, 1010, albumen 0, sugar 0.

*Cystoscopy*, April 5, after first operation shows projecting lateral and median masses of prostatic tissue.

*Operation*, July 8, 1910, suprapubic prostatectomy. Third lobe size of bantam's egg and small portions of lateral shelled out.

*Pathological report.* — Glandular hypertrophy.

*Convalescence* uneventful. Suprapubic wound became tight in ten days. Poor control over bladder. With bladder filled with boracic solution can walk to bath room from ward and void. Wears bottle attached. Bladder training. Discharged July 26, eighteenth day.

*Subsequent history.* — Letter Jan. 9, 1911: "Sorry to state that I have not much control of the bladder, for I am leaking and have been since I felt the hospital. I am obliged to wear a urinal night and day." Jan. 24, 1911: Examination at hospital. General condition excellent. Wounds healed. Wears urinal day and night. Can pass about one pint at night voluntarily. No residual. Given directions and instructions for self training of bladder. No erections since last operation.

*(To be continued.)*

## Clinical Department.

### A CASE OF PEMPHIGUS CHRONICUS VULGARIS OF THE ORAL CAVITY AND LARYNX.*

BY ROCKWELL A. COFFIN, M.D., BOSTON.

HERETOFORE the above disease has been classed by the profession as one referable to the dermatologist rather than the laryngologist. A careful analysis of this case will show how important it is for the laryngologist to familiarize himself with the disease as it appears in the mouth, pharynx and larynx.

The uncommon occurrence of pemphigus and epidermolysis bullosa hereditaria, which are very similar in many respects, makes it difficult for one to study its various manifestations in order to be able to make a positive diagnosis except by differentiation.

* Read at a meeting of the New England Otological and Laryngological Society, Feb. 3, 1911.

Lewis H. Miller reported, in 1897, a case of pemphigus where the symptoms started in the oral cavity and continued for twenty months before finally making its appearance on the skin.

Dr. J. W. Farlow and others have reported cases extending over various lengths of time. The case here reported involved, very extensively, the oral cavity, epiglottis and larynx for over four years before finally making its appearance on the skin. Mosler reports a case lasting several years in the mouth alone, and Fuchs describes a similar case of eleven years' duration.

This case was shown at the first meeting of the New England Otological and Laryngological Society. At that time the case was seen by most of the members present and various diagnoses were suggested. Syphilis seemed to be the prevailing diagnosis, for, as there were no blebs present, it certainly was suggestive. The author had the good fortune to see two unmistakable cases some years before, and consequently, with the aid of elimination, a probable diagnosis of pemphigus was made.

#### PEMPHIGUS CHRONICUS VULGARIS.

Mrs. E. R. W., aged fifty-seven years, of dark and rather sallow complexion and small stature. Up to the time of her present trouble has enjoyed generally good health. No history of syphilis, scarlet fever, measles, diphtheria or malaria. No glandular enlargement of any kind could be found. Nursed mother while mother had typhoid fever. Twenty-one boils followed. No numbness of any part of the body. Abscess of hip when four years old. At times some dizziness, but otherwise no suggestion of any disturbance of digestion. Has had no eruption on any part of the body or face. Six months before the present trouble started, the teeth of the upper jaw were extracted. At this period she was under the care of a general practitioner for herpes and mercurial stomatitis, but without benefit. The blebs were first seen under the tongue and on the mucosa lining the cheeks. They were usually irregular in shape, and varied from the size of a pea to that of a quarter of a dollar, and after lasting a few hours would rupture, leaving a reddish surface covered with the slightly thickened epithelium which, in turn, would slough off, leaving a reddened surface underneath. Up to this time she had lost 30 lb. She then moved to Medfield, Mass., where she was under the care of a general practitioner, Dr. A. Mitchell, who referred her to the writer.

Jan. 1, 1905: Under surface of tongue raw, with here and there white, thickened and detachable bits of irregular shaped mucous membrane, with a similar condition on the mucosa lining the cheeks.

Jan. 2, 1905: Examined larynx and found bleb on tip of epiglottis. Was given Fowler's solution. Patient went away, and was next seen on

Nov. 8, 1905: The condition was about the same. While taking arsenic and iron she noticed a slight diminution in the size and number of blebs. Argyrol was applied and Dobell's solution was given as a mouth wash, but did apparently little good.

April 6, 1906: Remains about the same and complains of a disagreeable feeling in throat. Examination of larynx showed a single bleb on the left arytenoid cartilage.

The patient now moved to Noank, Conn., where she was under the care of Dr. Wm. Hill, who made applications to the mouth and throat, but with little

benefit. The writer did not see her again, but an interview with her daughter revealed the fact that she had blebs on her eyes about three years before she died (Feb. 1, 1910), and films formed over her eyes until she became totally blind. About one year before she died, blebs appeared over the entire body, and one on the foot became septic, which was the immediate cause of her death. About two years elapsed before the eyes were involved, and over four before the skin was affected.

The diagnosis was made by eliminating the following diseases:

(1) Syphilis. No history. Blebs not characteristic of syphilis. No loss of tissue or scars characteristic of syphilis.

(2) Lupus. This disease is not one with bleb manifestations, nor do the lesions appear suddenly and then heal spontaneously in a comparatively short time. Scars peculiar to this disease were absent in this case. No nodules of granulation tissue.

(3) Diphtheria. Absence of Klebs-Lœffler bacillus and duration of the disease.

(4) Leukoplakia. Consists of thickening of the epithelium which is usually very adherent, and the lesions are not ushered in with bleb formation. It has no reddened tissue under the epithelium unless there has been some acute irritation of the part. It is not transitory.

(5) Mercurial stomatitis. No history of having taken mercury in any form. No salivation or breath that is so often found in these cases. No tenderness of teeth when mouth is suddenly closed.

(6) Herpes. Usually found in small clusters, confining itself to one side of the soft palate, uvula or pillars of the fauces. Small and round and scarcely ever assumes the size and irregular shape that is so common in pemphigus. Often associated with herpes is acute pain, while pemphigus simply is uncomfortable. Herpes lasts usually only a short time and then disappears, only to appear later.

(7) Epidermolysis bullosa hereditaria. This is the the most difficult of all to eliminate, and, indeed, if we had not the history and skin lesions to help us, I doubt if it would be possible to distinguish one from the other except from location. In the one case which the author has seen of epidermolysis, the skin lesions appeared only at points of contact or trauma, and in like manner the lesions in the mouth follow the same rule. The lesions in pemphigus seem to appear on any part of the mucous membrane without reference to trauma.

## ACUTE TOXEMIA CAUSED BY INFECTION OF THE THROAT BY THE COLON BACILLUS.*

BY CALVIN B. FAUNCE, JR., M.D., BOSTON.

*(From the Pathological Laboratory of the Massachusetts Charitable Eye and Ear Infirmary.)*

THIS case is of unusual interest because of the rarity of colon infection in general, and especially because of the very unusual site in which the lesion here occurred.

Mrs. P., who had been in her usual good health, developed suddenly headache, chilly sensations, lumbar and joint pains. She did not complain of the throat. Twelve hours after the attack began, she suffered marked prostration, severe headache and high fever (temperature, 103). The throat was red and edematous throughout, both tonsils were much enlarged and a grayish-white exudate presented at the crypts. Her condition became steadily worse, so that in twenty-four hours after the onset of the disease the prostration was profound. The exudate on the tonsils had coalesced so that they both were completely covered. This exudate could be easily stripped off without bleeding. There was, in addition, a general herpetic ulcerative condition of the mouth. Cultures taken at this time were pronounced negative in regard to the presence of Klebs-Lœffler's bacillus, but the clinical condition was considered so suggestive of diphtheria that 6,000 units of antitoxin were administered.

Twelve hours after receiving the antitoxin the general condition had improved, the condition of the throat remained the same. Cultures taken at this time again failed to show the presence of the Klebs-Lœffler bacillus. The patient's general condition from this time on gradually improved; the throat cleared slowly and in about two weeks had practically assumed its normal appearance.

*Bacteriology.* — Examinations of all the cultures taken from the throat were negative to the presence of the Klebs-Lœffler bacillus. The first culture examined was not only negative to this bacillus, but contained in pure culture a very rapidly growing, short, almost coccus-like, Gram-negative, bacillus.

The organism produced a grayish, viscid looking, slightly elevated layer on both blood serum and potato. The water of condensation showed a gray turbidity. Bouillon cultures became clouded and there was sediment formation. The organism had a slight independent motion; it did not liquefy gelatine. It produced gas in glucose-agar stab. It coagulated litmus milk and turned it pink. There was marked indol production in Dunham's peptone solution. The above characteristics served to identify the organism as a colon bacillus.

Subcutaneous inoculation of the organism with its toxin (contained in the water of condensation) caused the death of a healthy guinea pig in about fourteen hours. It is, of course, well known that the colon bacillus may cause early death by toxemia in this manner.

As was to be expected, I found the toxicity of the organism was lost after several months' cultivation in the laboratory, and thus large amounts of the organism then inoculated into a guinea pig had no effect.

Ordinarily the colon bacillus has no clinical significance and exhibits no pathogenic action. It is commonly associated, however, with other bacteria in inflammation of exposed surfaces. In this particular case, therefore, it seems probable that the organism was a secondary invader and that there must have been a primary injury to the tissue, possibly produced by the streptococcus.

The fact that the culture was pure instead of containing the great variety of organisms usually found in cultures taken from the throat was no doubt due to the great reproductive power of this organism, which enabled it to overgrow all other bacteria present. Whether or not it likewise had overcome other organisms in the throat itself is uncertain.

The picture produced in this patient by the infection was that of an acute toxemia, as shown by the high temperature, marked prostration, severe headache, chilly sensations and lumbar pains. Evidently this organism was either especially virulent or the resistance of the patient lowered, so that the tissues fell easy prey to the bacterium. How the colon bacillus came to be in the throat is a matter of conjecture. Possibly regurgitation of the stomach contents lodged the bacillus on the previously inflamed membrane. It seems more probable, however, that the infection occurred as in typhoid fever from food, water or the hands.

* Read at a meeting of the New England Otological and Laryngological Society, Feb. 3, 1911.

The apparent improvement, after the administration of antitoxin, was probably coincidental with the successful manufacture of antibodies in sufficient numbers to protect.

The most striking feature of this case, aside from the unusual situation of the lesion, is that the offending organism, usually non-pathogenic, was in this instance strongly pathogenic.

## Medical Progress.

### PROGRESS IN THE THEORY AND PRACTICE OF MEDICINE. NEW METHODS OF DEMONSTRATING TUBERCLE BACILLI.

BY FRANCIS W. PALFREY, M.D., BOSTON.

THE finding of tubercle bacilli is an event of such importance in the diagnosis of any case that it is natural that attention should be constantly directed toward the improvement of technical methods of attaining this result. Satisfactory as has been the Ziehl method and its modifications when it has given positive results, the frequence with which positive results have been obtained only after many examinations, and the great number of negative results in cases which are later known to be cases of tuberculosis, leave much to be desired. Thus studies of new procedures aiming to accomplish the demonstration of tubercle bacilli where the older method has failed deserve general attention.

#### CONCENTRATION METHODS.

For many years attempts have been made to devise means by which tubercle bacilli in sputum and other excretions may be concentrated in small compass so that when present in numbers too small to be detected readily in the simple smear they may still be detected by examination of a medium in which by special procedures they have been gathered together. These methods depend upon dissolution of the solid organic material in which the tubercle bacilli lie, followed by sedimentation. Biedert,[1] in 1886, first employed this principle by boiling the material with sodium hydrate. Muhlhäuser,[2] and Czaplewski,[3] in 1891, modified and improved this technic, and Camen [4] in 1892 added the device since then extensively employed in laboratories of adding alcohol to reduce the specific gravity of the fluid to accelerate sedimentation. Other processes have been described by other authors.[5] But these earlier methods, on account of the necessity of boiling or of much manipulation of each individual specimen, proved more laborious than was justified by their only indifferent results.

In 1908, however, two methods were published which, while similar in principle to those previously discarded, have had claimed for them great superiority in results, and more or less simplification of technic. These methods, and another observation with regard to the staining of the tubercle bacillus, to be described later, have led in the past three years to a great amount of investigation and discussion.

Chief of these is the "antiformin" method of Uhlenhuth.[6] "Antiformin" is the name of a proprietary fluid for use as a disinfectant, a solution of sodium carbonate and chlorinated lime,* which Uhlenhuth found to have a remarkable power to reduce sputum and tissue to a homogeneous fluid state, with destruction of all bacteria except the tubercle bacillus. This action is obtained at room temperature, although more rapidly at higher temperatures. Cells and mucus are destroyed, leaving the bacilli free in suspension, from which they may be obtained by sedimentation, with or without centrifugalization, or by certain other devices which other authors have described.

The second method of concentration is that of Ellermann and Erlandsen,[5] called by them the "double method," which, while less convenient in application than the antiformin method, has given results far in advance of older procedures, comparing favorably with those of the antiformin method.

Many articles have been published describing these newer procedures, especially the antiformin method, giving numerous modifications of technic and estimates of their value. Large numerical statistics are given in but few instances, yet enough are reported to show that the methods deserve serious consideration. Practically no unfavorable opinions have been expressed, although evidence enough has not yet been collected to justify a final estimate of their true worth.

This being the case, it is desirable to review briefly the findings of those who have most carefully studied the question. A list of authors who have written on the use of antiformin is given below.[6–32] Many variations of technic are described, varying chiefly in the concentration of the antiformin solution used and in the manner of collecting the freed bacilli. The sputum or other material is treated with antiformin in varying amounts, making the concentration of the mixture all the way from 2% to nearly 50% antiformin. The mixture is shaken and allowed to stand until it is homogeneous, from thirty minutes or less to twenty-four hours, according to the strength of the solvent and to the temperature, some keeping it at room temperature, other at body temperature, others at 60° C. and others boiling. In concentrating the freed bacilli the chief reliance is upon long centrifugalization, but a few depend upon simple sedimentation by standing, others by reduction of specific gravity by adding alcohol or acetone, while others still make use of the principle of Lang and Nitsche [36] that tubercle bacilli tend to adhere to globules of the fluid hydrocarbons, benzol, ligroin, petroleum, ether or chloroform, which are emulsified in the antiformin-sputum mixture and allowed to separate, the bacilli being finally found at the zone of contact. When strong antiformin solutions are used, there is difficulty in fixing the smears. On this account some writers have washed the sediment with several changes of

* The method of preparation is given by Paterson [33] as follows: Sodium carbonate, 600; chlorinated lime, 400; Aqua dist., 4,000. Dissolve the sodium carbonate in 1,000 cem. of the distilled water. Triturate thoroughly the chlorinated lime in the remainder of the water. Filter. Mix the two and filter again.

water or salt solution in spite of the risk of losing some bacilli. Others have spread their sediment upon smears of untreated sputum from the same specimen.

Uhlenhuth's [7] own procedure is to treat the sputum with 20%–25% antiformin of equal volume, stirring and letting it stand for half an hour till homogeneous, then centrifugalizing thirty minutes, pouring off the supernatant fluid, washing twice by centrifugalizing with normal salt solution, smearing and staining the washed sediment by the ordinary methods.

Bernhardt [8] combines the antiformin method with the ligroin method of Lang and Nitsche [36] as follows: To 5 ccm. of sputum are added 20 ccm. of 20% antiformin, the whole is shaken and let stand with occasional shaking till homogeneous (about half an hour); 25 ccm. of water are added, then ligroin in a layer 3 to 5 mm. deep on the surface; this is shaken violently to a thick emulsion and allowed to stand till separated (twenty or thirty minutes). Material from the layer just beneath the ligroin is collected, dried on a warm slide, fixed and stained. Centrifugalization to hasten the separation of the ligroin defeats the object.

Goerres [12] adds to sputum water and antiformin to secure a strength of 25% antiformin in the mixture, shakes and lets stand four to six hours, then agitates gently to dislodge flocculi adherent to the walls of the tube and lets stand again till clear. He then pours off the supernatant fluid, adds water and centrifugalizes in special tubes stoppered at the bottom. He fixes smears from the sediment by spreading on fresh smears from the same specimen of untreated sputum. He has tried the ligroin technic of Bernhardt but has not found it so reliable as simple sedimentation.

Haserodt,[14] on account of difficulty in fixing smears, uses antiformin diluted to 5%, adding four or five volumes of this to the sputum and letting it stand twenty-four hours at room temperature, after which he treats it with ligroin in the same manner as Bernhardt.

Hüne [15] adds one or two volumes of alcohol to the sputum-antiformin mixture to aid sedimentation, centrifugalizing and refilling repeatedly. To the washed sediment he then adds two or three drops of glacial acetic acid, three or four volumes of distilled water and ether, shakes and finally centrifugalizes.

Huzuella [16] obtains bacilli by adding salt to his homogenized sputum to increase the specific gravity, and takes smears from the surface after the fluid has stood for a number of hours on a water-bath of 60° C.

Koslow [18] adds to sputum an equal volume of pure antiformin and shakes for five minutes. He then dilutes with 10 ccm. of water for each 1 ccm. of antiformin, and the same amount of a mixture of equal parts of acetone and ether. All is then shaken and let stand until three layers have separated. The middle layer which contains the bacilli and undissolved residues is dried, fixed and stained on a slide.

Loeffler's [20] technic is similar but makes use of chloroform instead of the acetone and ether. The chloroform is thrown down from the emulsion by centrifugalizing, and smears are taken from the layer just above it.

Merkel [21] praises the use of antiformin to detect tubercle bacilli in specimens of tissue. These he prepares by cutting in thin sections by the freezing microtome, after which antiformin acts as on sputum.

Rau [24] found the ligroin technic less successful than the simple antiformin method.

Schulte's [27] technic, chosen as the best by Trunk [31] after trial of many others, is as follows: To 10 ccm. sputum add 20 ccm. 50% antiformin; shake and let stand with occasional shaking for ten to thirty minutes till homogeneous; add 30 ccm. alcohol, shake and centrifugalize one-half to one hour; invert centrifuge tube, smear and stain.

A number of authors have used other reagents than antiformin for homogenizing, notably Bogason,[33] Hüne,[34] Hammerl,[35] Lang and Nitsche [36] and Zahn.[37]

The Ellermann-Erlandsen [5] method has been tested by Bierotte [9] and by Kögel. Kögel [38] gives the technic briefly as follows: To 10–15 ccm. of sputum add half as much 0.6% $Na_2CO_3$ and let stand twenty-four hours at 37° C. Pour off the upper portion of the supernatant fluid, centrifugalize the remainder and again pour off the fluid. To the sediment add four volumes of 0.25% NaOH, stir, boil and centrifugalize, smear and stain. Bierotte [9] confirms the efficiency of the method but notes as objections the disagreeable odor developed and the greater amount of time and trouble required in its execution as compared with the antiformin method, which gave in his hands practically equal concentration.

The results of these methods given by different authors are as follows:

Finkelstein,[11] in fifty-two sputa which had previously been positive, but at the time of examination showed no tubercle bacilli in the simple smear, demonstrated bacilli by the antiformin method in twenty-two. Lagrèze,[19] in fifty sputa negative in smear, found tubercle by antiformin in ten. Meyer,[22] among ninety-nine sputa, found fourteen positive by antiformin, although negative in smear. Paterson,[23] found five positive after antiformin among 23 negative in smear; Rau,[24] five positive out of eighteen. Reicher,[25] in one hundred cases, found that 27.5% of the positive results were obtained by the antiformin method, while the simple smear proved negative. Schulte,[27] in ninety-seven sputa, found seven positive only by antiformin. Weihrauch,[32] found twenty-six positive by antiformin, of which but eight were positive in simple smear. Brown and Smith,[10] by cultures from fifty sputa treated with antiformin, obtained growth from thirty-three of the thirty-five which were positive in smear and from four of the fifteen which were negative in smear. Goodman [13] found the antiformin process to give distinct increase in the number per field, but no cases were positive after antiformin treatment in which bacilli were not

found by the ordinary method. Sachs-Muke [36] reports two cases negative after antiformin treatment which were positive after $H_2O_2$ treatment, suggesting that the bacilli had been destroyed by the antiformin. Kögel,[38] using the Ellermann-Erlandsen method, estimates that the concentration of bacilli is increased between fifteen and thirty times by the process. Of routine sputa 28 to 31% of those which he found positive were found so only after concentration.

A possible source of error which must be considered in all complex methods is the occurrence of acid-fast bacilli in water as described by Brem [39] and by Beitzke.[40] But in many of the reports mentioned in the preceding paragraph, the tubercle bacilli were proved by animal inoculation.

### TUBERCLE BACILLI NOT TAKING THE ORDINARY STAIN.

A matter of great interest and of possible, although still uncertain, practical value is the question of tubercle bacilli which cannot be demonstrated by the Ziehl stain. It has long been described that material containing the virus of tuberculosis, capable of producing tuberculosis when injected into animals, may fail to contain demonstrable tubercle bacilli.[41] In 1907 Michaelides [42] published studies of animal material certainly tuberculous in which bacilli were not found in Zeihl or in Gram stains, but were demonstrable by Löffler's modified Gram stain. At the same time Much [43] demonstrated in similar material, not containing acid-fast bacilli, but capable of causing tuberculosis is animals, certain granular bacilli and granules, either single or in rows, as if contained in an invisible bacillus, stained by a modified Gram method and seeming to be related to the Gram-staining granules in ordinary tubercle bacilli. Soon afterward Much reported three cases of human tuberculosis in which acid-fast bacilli were absent but in which these granular bacilli and granules were found. He expressed the opinion that the tubercle bacillus occurs in three forms, the acid-fast, the non-acid-fast and the granular form.

These findings have attracted wide attention.[44–58] In studying these forms most authors have followed the staining method known as "Much II," which is performed as follows: Steam twice or stain cold for twenty-four to forty-eight hours in fresh carbol-methyl-violet (saturated alcoholic methyl-violet 10 ccm. to 100 ccm. 2% carbolic acid); dry with filter paper; Lugol's solution five to ten minutes; 5% nitric acid one minute; 3% hydrochloric acid ten seconds; acetone and alcohol equal parts to decolorize; wash with water and counterstain with very dilute carbol fuchsin, vesuvin or saffranin. A number [53] have combined this method with Ziehl's by staining in the first step with a mixture of one-fourth Much's carbol-methyl-violet and three-fourths carbol fuchsine, proceeding otherwise according to Much's directions and counterstaining with saffranin or Bismarck brown or weak methylene blue. Eisenberg [45] has collected a number of staining methods of value.

All who have written on the subject confirm the occurrence of Much's granules in tuberculous material and there is little reason to doubt either that they represent a certain stage in the life of the tubercle bacillus or that they are capable of producing tuberculosis. It is disputed, however, whether they are granules in young developing bacilli or in old resisting forms. It has been both suggested and denied that they are spores, but no decision has been reached as yet.

The more practical question as to their diagnostic value is also in doubt. Their appearance under the microscope is fairly characteristic, but whether it is possible to make them the basis for positive diagnoses is still unestablished. They occur as blue-black granules either single or in rod-like chains or in slender bacilli. Those occurring in visible bacilli would seem the most reliable. Since they are smaller than cocci, those occurring in chains are believed by Trunk [53] also to justify a positive diagnosis. Less importance can be attached to the single granules; the significance of these if they are still present after treatment with antiformin is probably too undertain to deserve attention.

The occurrence of the non-acid-fast bacilli and of Much's granular form is apparently frequent. They are reported as almost invariably present where the acid-fast bacilli are present, and in a considerable proportion of cases where acid-fast bacilli are not found.

Beyer [44] reports that of fifty-two sputa from clinically tuberculous cases thirty-four were positive both by Ziehl and by Gram, fourteen negative to both and four negative to Ziehl but positive to Gram. Rosenblat,[50] in a study of eighty sputa, found granules in rod form, in all which were positive to Ziehl and in one at that time negative to Ziehl but later positive. Schulz [51] finds the granular form of bacilli in the absence of ordinary bacilli to be especially common in cases of long-standing tuberculosis. Telermann [52] reports eight cases negative to Ziehl but positive to Gram. Weihrauch,[55] in ninety-five sputa, found thirty-six positive by Much's Gram stain after antiformin against twenty-six after antiformin alone and against eight after simple Ziehl-stained smear. The evidence adduced that tuberculosis was present in the cases where the granular non-acid-fast organisms were found in the absence of acid-fast bacilli is in most instances apparently conclusive.

Thus the literature of the past three years offers for further consideration methods which may deserve wide application in the diagnosis of tuberculosis. It must not yet be assumed that much that has been written is not still liable to contradiction. It may even be that none of these methods in the test of time will prove of permanent value. Yet such a presumption has been established in their favor that they cannot be ignored.

REFERENCES.

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develop later belong to the putrefactive group. He has adopted the term of "acute intestinal toxemia" for the acute diarrheas of infancy which occur most commonly in the summer. He fed ten series of four kittens each on milk, condensed milk or modified milk, which had been boiled or sterilized and then incubated for twenty-four hours either with or without the addition of one or more of the following organisms: Bacillus subtilis, bacillus mesentericus vulgatus, bacillus proteus vulgaris. The course was essentially the same in all. After a longer or shorter period of apparent health there was a sudden onset of weakness, followed by stupor, with death in twenty-four to forty-eight hours. Diarrhea was not a constant symptom. No micro-organisms were found in the tissues. The pathological lesions were few and indefinite. The contents of the large intestine were always strongly alkaline. He concludes, therefore, that the disease is a toxemia and that the toxins are due to the action of putrefactive organisms on the intestinal contents, not to toxic substances formed before the food is ingested. The putrefactive organisms develop because the inhibitory lactic acid forming organisms have been destroyed.

He believes that the conclusions drawn from animal experimentation may be applied to the acute diarrheas of infancy, that is, the cause of acute intestinal toxemia in infants is the heating of the milk which destroys the lactic acid organisms. He believes, therefore, that infants should be fed on raw milk. He thinks that the danger of tubercular infection is insignificant. Clean, pure, raw milk is better than dirty raw milk, but dirty raw milk is better than sterilized clean milk.

## Book Reviews.

*Nurses' Handbook of Drugs and Solutions.* By Julia C. Stimson, R.N., Vassar A.B. Boston: Whitcomb & Barrows. 1910.

This compendium of materia medica should prove not only a valuable textbook for nurses, but a useful and convenient manual of information for other students.

*On Acute Intestinal Toxemia in Infants. An Experimental Investigation of the Etiology and Pathology of Epidemic or Summer Diarrhea.* By Ralph Vincent, M.D., Member of the Royal College of Physicians; Senior Physician and Director of the Research Laboratory, the Infants' Hospital, London. An address delivered before the Glasgow Obstetrical and Gynecological Society on Nov. 23, 1910. Pp. 83. London: Baillière, Tindall & Cox. 1911.

Vincent first calls attention to the well-known fact that the boiling of milk destroys bacteria, but not spores. The lactic acid organisms do not form spores; hence the organisms which

*The Prevention of Sexual Diseases.* By Victor G. Vecki, M.D. With Introduction by William J. Robinson, M.D. New York: The Critic and Guide Company. 1910.

This book is an exposition of the author's views on questions which it is becoming the fashion to discuss frankly. Its literary style is not idiomatic; its temper is one of rather characteristic Teutonic expediency. It recommends the licensing and supervision of prostitution. In the chapter on individual prophylaxis it advises chastity and continence; then, assuming that no one will follow the advice, on the principle of Kipling's

> "Be warned by my lot,
> Which I know you will not,"

proceeds to give instructions in the use of condoms and other supposed agents of protection. This is the advice which it suggests that a doctor should give to those who seek: Be good, if you can; I know you won't, so I will tell you how to be discreet. Whether this be good advice is a question that remains to be decided on its own merits. For the present its solution must rest with the professional conscience of the individual physician.

THE BOSTON

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## HOMERIC PHYSICIANS.

THE antiquity of our medical craft is so great that there is not a literature whose earliest monuments do not contain mention of physicians and of their ministrations. To suffering humanity the healing art has always seemed endowed with such miraculous beneficence that from the remotest times it was considered to be of directly divine origin. Particularly was this so among the Greeks. Asklepios himself was the son of Apollo, who, as the god of light, of poetry and of medicine, represented, in the symbolism of Hellenic mythology, a pagan trinity, typifying the three noblest gifts of heaven to man. To the Greeks, rather than to their successors, the Romans, modern civilization is really indebted for its ideals in medicine; and medical tradition to-day, like so many other aspects of our life, is continuous with that of Greece, whose heroes still remain archetypes of excellence for our profession.

It is, therefore, particularly interesting for us to read in Homer descriptions of these demigods of medicine, which, though far from being contemporaneous with their lives, are yet essentially first-hand accounts from an age not so far removed in spirit as in years from that in which they lived. Perhaps the most striking thing in these accounts is that they represent the characters in question not as gods, but as men. To Homer Asklepios is not a divinity but a hero, "skilled in surgery and in the use of herbs," and his sons appear as fighters, chieftains and men of action. It was to later ages that these soldier-physicians owed their apotheosis, in a manner precisely analogous with that in which Arthur and Merlin and other semi-historic early British characters were later idealized in our national epic of fairyland and romance. Both instances are apt examples of the innate hero-worshiping instinct of mankind.

The first mention of Asklepios in Homer is in the "Catalogue of the Ships," that superb epic of proper names, unhappily so often neglected in the classroom. Here, even, Asklepios does not appear *in propria persona*, but is merely referred to as the father of his sons, a fate that has befallen many a less famous personage. These sons, Podalirios and Machaon, themselves "good physicians," or, as Pope paraphrases it, "divine professors of the healing arts," led the Greek forces from Tricca, from "rock-bound Ithome," and from Oechalia, cities of Thessaly; "and there went with them thirty hollow ships." It was primarily as generals that these heroes came; their medical functions were incidental, secondary, valuable avocations.

Podalirios is mentioned only once again in the Iliad, but Machaon is twice a conspicuous character. In the fourth book, he appears as the healer of "godlike Menelaos." A truce had been arranged between the Greeks and the Trojans in order that the quarrel might be decided by a single combat between Menelaos and Paris and though the former was victorious, the gods, in conclave on Olympus, determine that the war shall continue. Accordingly, to bring about a breach of the truce, Pallas Athene persuades Pandaros secretly to aim an arrow at Menelaos, wounding him in the groin. Agamemnon forthwith vows vengence on the Trojans, consoles his injured brother, and bids Talthybios, "the divine herald," to summon straightway Machaon, "son of the blameless physician Asklepios." Talthybios finds him "standing surrounded by the strong ranks of spear-bearing men," and delivers the message, which "rouses the heart in Machaon's breast." Machaon comes, and on reaching the spot "where fair-hair'd Menelaos lay wounded," "straightway from the close-fitting girdle he drew the arrow, and as he drew it out the sharp prongs tore the wound anew. And he loosed the all-gleaming girdle, and from beneath it the doublet and belt, toilfully wrought of brass. Now when he saw the wound, where the keen arrow sank in, he sucked out the blood and skilfully sprinkled on soothing drugs, which formerly Cheiron, well disposed, had given to his father."

This Cheiron, the centaur, "famed for his skill in hunting, music, medicine and prophecy," is mentioned again in the eleventh book of the Iliad as a teacher of Achilles. It is instructive,

in the above passage, to note Machaon's method of procedure. Modern surgery, doubtless, would hardly approve his insalivation of the wound, but the antiseptics employed were probably beneficial. At any rate Menelaos recovered.

The second mention of Machaon is in the eleventh book of the Iliad. Here, during the third great battle between the Greeks and the Trojans, Machaon is himself wounded below the right shoulder by a three-prong'd arrow from the hand of Paris, "spouse of fair-hair'd Helen." Seeing him fall, Idomeneus bids Nestor straightway go to him and take him swiftly to the ships, "for a physician is a man worth many others." This remark of Idomeneus, be it said, is one of the frankest compliments to our profession in literature. Nestor conveys Machaon safely out of the fight, through the Greek tents and beach'd ships to the shore, "and they wiped away the sweat from their tunics as they stood there in the breeze by the sands of the sea." Then they entered a tent, and Machaon was ministered to by "fair-hair'd Hecamede, daughter of great-hearted Arsinoös." The treatment apparently consisted in the administration by mouth of a large goblet of Pramnian wine, qualified with goat's milk cheese and flour, a beverage which it is noted that Nestor also shared. No local treatment of Machaon's wound is described The arrow evidently did not lodge, and perhaps, after a habit still noticeable among surgeons, Machaon cared little to have his own procedures applied to himself. Nevertheless it is recorded that he lay ill in the tent for some time.

At the close of this book both he and his brother Podalirios are mentioned again. The latter is "in the plain, abiding the fierce war of the Trojans," and Machaon "lies himself in need of a blameless physician." In the absence of both, Patroklos has to play the surgeon for the wounded Eurypylos, which he does in approved fashion, "for with his knife he cut from the thigh the sharp and bitter missile, and washed away the black blood with warm water, and on the wound he put an astringent, pain-subduing root, powdering it with his hands, which took away from him all suffering; and the wound was dried and the blood stopped." It would be interesting to know what this powder was. At any rate, the treatment seems to have been satisfactory, though without initial anesthesia.

These episodes, though incomplete, go far to indicate what manner of man was the Homeric physician, for nothing can excel in vividness the descriptive glimpses by which Homer reveals the life he knew, and makes it, in many respects, even more real than our own. Perhaps the fundamental character of the "blameless physician" has not changed so much as some other things in thirty centuries. It is not less gratifying to learn the respect in which our profession was then held than it is to see that in Homer's time a physician was not solely a doctor but a leader and a man of action as well.

## THE NEW YORK NEUROLOGICAL INSTITUTE.

The Neurological Institute of New York has issued its first annual report. The institute was incorporated in April, 1909, to develop an organization, especially designed, with adequate facilities for the improvement of the welfare of persons suffering from nervous diseases. The hospital department was opened on Dec. 1, 1909, and on Jan. 12, 1910, a license to conduct a dispensary was granted by the State Board of Charities. The Institute has had an extremely active year, and the present facilities of the hospital, which is domiciled in a leased building on East 67th Street, are so inadequate that many private patients are being treated at hotels and at other hospitals. The executive committee has endeavored, in its first year, to demonstrate the need for such a hospital, and, besides, to build up an organization which could not only conduct this hospital successfully, but would be capable of operating a much larger hospital in the city in conjunction with a sanatorium in the country. With these ends in view, the committee has paid high salaries in order to secure capable heads of departments, and as a result of its efforts it believes that it now has the nucleus of an organization capable of operating creditably a much larger city hospital at very little additional expense. The work of the Institute, the report states, is being watched by other cities. Repeated inquiries have been made as to its progress, and it is believed that it is only a question of time when many of the largest cities throughout the country will follow its example. The lease of the present quarters expires with this year, but can probably be extended for an additional year, and it is hoped that by the expiration of that the Institute will be provided with a hospital building commensurate with its needs. The following extracts are from the report of the executive physician, Dr. Joseph Collins:

"Although the Neurological Institute is designed for the study and treatment of nervous

and mental diseases, we have made no attempt to handle frank cases of insanity. We have had a large number of patients with mental symptoms, but in the majority of them these were not sufficient to constitute insanity. We believe that many cases of insanity have been averted by the prompt recognition of the gravity of certain symptoms and by the vigorous treatment which was adopted to overcome them. The number of surgical operations performed during the year, and their character, is set forth in the accompanying table. The work has grown rapidly, and already we have been obliged to ask for increased facilities for doing this branch of the work. It is probable that there is no department of the healing art in which specialization is more justified than that of neurological surgery. It is not hazarding one's reputation as a prophet to say that a generation hence the general surgeon will operate for brain and spinal cord disease as often as he does for cataract, — that is, never, unless compelled to do so. No man can become a competent neurological surgeon who has not had a neurological training and who is not at home in the experimental laboratory. These the Institute is aiming to provide, and we may legitimately venture the hope that within a short time those who are so unfortunate as to require neurological surgery will not be obliged to go from the metropolitan city of this country to small sister cities that they may have the skill of an expert. The report of the director of the laboratory shows that two thousand six hundred and eighty-six examinations have been made of the various excretions and secretions of the body. The clinical and histological laboratory, which is adjacent to the chemical and pathological laboratory, and which has been developed only during the last few months, is now completely equipped and in full operation. Among other ways in which this hospital distinguishes itself from all others are its departments for applied therapeutics, and it is safe to say that no other institution is so well-equipped for the utilization of water, heat and superheated air, electricity, Zander exercises, massage, calisthenics, re-educational movements. Really much of the success of the hospital is dependent upon the fact that patients at once realize that here something tangible is being done for the relief of their ailments; something more than the mere administration of medicines and custodial care."

Having referred to the useful work of the occupation and recreation departments, Dr. Collins states that this hospital has demonstrated three things: (1) the necessity for a hospital for the study and treatment of nervous and mental diseases; (2) the inadequacy of the facilities afforded by the present building; (3) the urgent need of a country branch. After speaking of some of the other requirements of a proper city hospital to care for one hundred and fifty patients, he goes on to say:

"Finally, and most important, it should provide ample facilities for instruction to physicians, nurses, trainers, attendants and special workers of all kinds. We believe that the vital element of our work is educational. Those who are sick may profit from the Institute's existence now, but the great profit that shall come to all mankind throughout the country will come through the ministration and example of those who are taught here in special fields. Such teaching must be personal and individual. It can be imparted in no other way."

## THE METROPOLITAN WATER AND SEWERAGE BOARD.

IN civilized communities, the importance of water-supply and of sewerage is so great and so obvious that every one would agree that their supervision and administration should be in the most competent and responsible hands. For a number of years in the Boston Metropolitan District this duty has been lodged with the Metropolitan Water and Sewerage Board, which has so conscientiously and efficiently done its work that to-day our community has an abundant and reliable water-supply and a sewerage system commensurate with its position as one of the great centers of population and enlightenment in this country. At the time of the Paris Exposition in 1900, the report of our Metropolitan Water Board, describing the extensive works then in progress, now completed, was submitted to accompany the exhibits contributed to that exposition by the Commonwealth of Massachusetts as evidence of its advancement in the arts, crafts and sciences of civilization.

A perusal of this report not only recalls the extensiveness of these metropolitan works and their present importance and value to the public health, but emphasizes the variety of special knowledge, as well as the probity and good judgment essential in those who control and direct the functions of the board. These are qualities which the board as a whole has abundantly shown, to its own distinction and the advantage of the community. It would seem desirable that there should always be on the board, which consists of three, one member who is a lawyer; one who, as a hygienist, is familiar and, if possible, associated with the work of the Massachusetts State Board of Health; and one with special engineering or business training. These positions are salaried, and are, therefore, at all times liable to be coveted by political spoilsmen. It has been our great good fortune hitherto that they have been filled for the most part by men not only of

personal capacity, but above suspicion or imputation of motives other than those of public-spirited service. For the credit and welfare of the community, it is sincerely to be hoped that this may always continue to be true in the future.

## MEDICAL NOTES.

Election of Dr. Fields. — Report from Baltimore, Md., states that at the session on April 19, in that city, of the National Association of Shellfish Commissioners, Dr. George W. Fields, commissioner of fish and game of Massachusetts, was elected president of the organization for the ensuing year.

Defalcation in German Red Cross. — Report from Berlin states that there has recently been discovered a defalcation to an amount equivalent to $50,000 in the accounts of the Women's Red Cross for the German Colonies. It is unfortunate that even organizations of medical beneficence should not always be free from malfeasance of this sort.

Measles Epidemic Aboard a Steamer. — On April 13, there reached Honolulu the steamship *Oteric* from Madeira, with 1,552 Portuguese immigrants aboard. During the voyage, 75 children died on the ship from an epidemic supposed to be measles. The source of this epidemic and the exact nature of the disease in question are to be investigated by a special committee.

Recrudescence of Cholera in Honolulu. — Report from Honolulu on April 18 states that four cases of Asiatic cholera have recently occurred in that city. This outbreak is regarded as a recrudescence of the epidemic which, it will be remembered, prevailed there from Feb. 24 to March 25 of this year. Persons leaving Honolulu by steamer have been forbidden to carry with them from that port any food or bottled water.

Doctor Svante Arrhenius. — Svante Arrhenius, the Swedish chemist who is at present giving a course of lectures on cosmogony before the Lowell Institute in Boston, is a man of considerable scientific distinction. He was born near Upsala in 1859, was educated in that town, and received his doctorate of philosophy in 1884 at Stockholm. He also holds medical degrees from Upsala and Heidelberg. He has made important contributions to the theory of dissociation and conductivity of electrolytes, and to the chemistry of the blood. He received the Davy medal in 1902 and the Nobel prize in 1903. His medieval name and his interest in cosmogony give an unusual flavor to the personality of this modern scientist and physician.

Purification of Swimming Pools. — At a recent meeting of the Illinois Water Supply Association, Prof. Severance Burrage, of Purdue University, described a method which he employed for disinfecting the water of swimming pools by means of chlorinated soda in the form of bleaching-powder. A pound and a half of the powder sprinkled on the surface of the pool each night was found to keep the bacterial content of the water below the hygienic limit for a week, whereas tanks in constant use without such disinfection need to be emptied and cleaned twice weekly. In Belfast, Ireland, it is reported that a method has been devised for the purification of swimming tanks by a process of constant filtration and aëration, which keeps the water pure and fresh for a long period of time.

### BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, April 18, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 40, scarlatina 37, typhoid fever 4, measles 193, smallpox 0, tuberculosis 26.

The death-rate of the reported deaths for the week ending April 18, 1911, was 21.35.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, April 22, 1911, was 258, against 222 the corresponding week of last year, showing an increase of 36 deaths, and making the death-rate for the week, 19.53. Of this number 128 were males and 130 were females; 254 were white and 4 colored; 158 were born in the United States, 97 in foreign countries and 3 unknown; 59 were of American parentage, 170 of foreign parentage and 29 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 52 cases and 6 deaths; scarlatina, 30 cases and 5 deaths; typhoid fever, 3 cases and 1 death; measles, 185 cases and 1 death; tuberculosis, 59 cases and 26 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 34, whooping cough 1, heart disease 34, bronchitis 8. There were 14 deaths from violent causes. The number of children who died under one

year was 53; the number under five years, 75. The number of persons who died over sixty years of age was 76. The deaths in hospitals and public institutions were 102.

Lecture on Sex Hygiene. — On April 18, Dr. Richard C. Cabot, of Boston, delivered a lecture on "Sex Hygiene" before the Fathers' and Mothers' Club in this city. There was a general discussion following the lecture.

Mad Dog in Boston. — The Boston Board of Health has recently issued a warning against a rabid dog which on April 17 ran through certain streets of the city. The animal was a small black Scotch terrier.

A Centenarian. — Miss Eliza Bullock, of Bristol, R. I., died of cerebral hemorrhage on April 21, the day after celebrating the supposed one hundred and first anniversary of her birth. She had been in excellent health until a few days before her demise.

Penalty for Failure to Clean A Back Yard. — Upon complaint of the Boston Board of Health, a householder of this city was last week fined $20 before the municipal court for failure to comply with an order to clean out the back yard of a house which he owned. From this sentence he appealed and was held in $200 bail.

Manufacture of Paper Cups. — The Massachusetts State Board of Health last week transmitted to the House of Representatives a report of its investigations into the conditions under which paper drinking cups are manufactured in this commonwealth. These conditions it finds satisfactory and believes that the public health is in no way endangered through the use of such cups.

A Living Centenarian. — Moses Carr, of Sangerville, Piscataquis County, Me., celebrated, on April 22, the supposed one hundred and first anniversary of his birth. He is said to be in active good health and to take long daily walks in all weather. Born in 1810, he came to Sangerville as a young man in 1832, and has spent his life there as a farmer and woollen merchant.

Birth of a Twentieth Child. — Last week was reported the birth of a twentieth child to Mr. and Mrs. John White, of Wakefield, Mass. During the twenty-four years since their marriage, Mrs. White has had 17 pregnancies, 14 single and 3 of twins. Of the 20 children, 16 are now living. It is believed that this is the largest family in the state of Massachusetts.

Case of Monocular Color Blindness. — It is reported that a case of monocular color blindness has recently been discovered in a student at Mt. Holyoke (Mass.) College. This is an exceedingly rare condition, only five similar cases having previously been described in the literature.

Tuberculosis Day, 1911. — It is announced from Hartford, Conn., that next Sunday, April 30, is to be observed throughout that state as Tuberculosis Day. This is in accordance with the plans of the National Association for the Study and Prevention of Tuberculosis.

Meningitis in Greek Immigrants. — Report from Fitchburg, Mass., states that in that city three cases of meningitis, two of them fatal, have developed among recent Greek immigrants. Other cases among Greek immigrants are reported as having occurred in the western part of the state. Reference to the present epidemic of meningitis in Greece may be found in the issue of the Journal for April 13 (page 550).

Death after Eating Jelly Beans. — In the issues of the Journal for March 30 and April 13, we noted the seizure at Providence, R. I., of large amounts of jelly beans alleged to contain talcum. On April 23 there was reported from Warwick, R. I., the death of a small boy with symptoms of acute arsenic poisoning after eating some similar beans. Samples of the suspected confectionery have been seized for further analysis.

Social Service at the Massachusetts General Hospital. — The fifth annual report of the social service department of the Massachusetts General Hospital describes the work done during 1910. The report emphasizes the fact that this work is supported solely by voluntary private contributions. At least $12,000 are needed for the expenses of the current year. During the five years of its existence, this department has dealt with 6,844 patients.

Instructive District Nursing Association. — A meeting was held, April 26, in Jacob Sleeper Hall, to promote the interests of the Boston Instructive District Nursing Association. Addresses were made by President Charles W. Eliot; by Professor Sedgwick, of the Massachusetts Institute of Technology; by Dr. Alfred Worces-

ter, of the Waltham (Mass.) Training School, and by Dr. Henry B. Favill, professor of clinical medicine at Rush Medical School, president of the Tuberculosis Institute of Chicago, and chairman of the committee of the American Medical Association on health and public instruction. The work of the association was described in detail, and its needs for the future outlined.

Four Hospital Bequests. — Among numerous charitable and philanthropic legacies in the will of the late Harriet E. Goodnow, of Sterling, Mass., filed for probate at Worcester, Mass., on April 17, are bequests of five thousand dollars each to the Massachusetts General Hospital, the Massachusetts Homœopathic Hospital, St. Margaret's Hospital and the New England Hospital for Women and Children. It is provided that in each instance this money be used for the establishment of a free bed, to be known as the "Waite Memorial Bed."

The Tyler Street Day Nursery. — On April 22, the Tyler Street Day Nursery ceased to exist, being authorised by the Supreme Court to turn over its funds, amounting to about $20,000, to the Boston Dispensary. The nursery was first started as a parish enterprise in connection with St. Paul's Church. In 1892 it was incorporated for "the purpose of encouraging mothers to support themselves and their children by caring for the children while the mothers were absent from their homes at work." From that time the nursery has constantly done a valuable work in the community. The income from its funds is now no longer sufficient to continue this work, and it has, therefore, seemed best to merge the nursery with the Boston Dispensary. Local conditions seem no longer suitable for maintaining a day nursery in that part of the city, and the Dispensary will, therefore, use the Nursery buildings on Tyler Street as a hospital for the sick and convalescent children of working people.

A Prolific Progenitor. — John M. Doucette, who died at Wakefield, Mass., on April 23, at the reputed age of ninety-six, is said to be survived by 260 direct descendants, namely, 10 children, 94 grandchildren, 147 great-grand children, and 9 great-great-grandchildren. Mr. Doucette, who was born in Ireland, always enjoyed excellent health and continued to do active outdoor work until within six months of his death. The prolific average of his family apparently persisted unimpaired through the first generation, but already shows evidence of decline in the second. It is probably safe to assume that under the conditions and environment of modern American civilization, the fertility of the third and fourth generations will not continue at the same rate of arithmetic progression.

Worcester City Hospital. — The fortieth annual report of the trustees of the City Hospital of Worcester, Mass., presents the record of work of that institution for the year ending Nov. 30, 1910. During this year the number of patients treated in the house was 4,630; the total number of visits to the Out-Patient Department was 19,309, and to the accident room, 811. During the Worcester typhoid fever epidemic in August and September, 135 cases of this disease were admitted to the hospital, of whom 10 died. There was only one nurse who contracted the infection. Thirty nurses were graduated from the training school in 1910. The need is emphasized of improved living accommodations for nurses by adequate addition to the Memorial Nurses' Home.

### NEW YORK.

Therapeutic Virtue of High Rock Spring. — The state reservation at Saratoga is now nearly complete. The most recently acquired spring is the well-known High Rock, which possesses the greatest historic interest of any of the Saratoga springs, as it was to this that in 1763 the Indians brought Sir William Johnson to be cured of rheumatism.

Bloomingdale Hospital. — The Board of Governors of the New York Hospital has elected Dr. William L. Russell to be superintendent of this hospital to succeed Dr. Samuel B. Lyon, who will retire July 1, after twenty-five years' service. Dr. Russell is at present superintendent of the Long Island State Hospital, and for a number of years was medical inspector for the New York State Commission in Lunacy.

Experimental Confirmation of Evidence in the Patrick Case. — In continuation of its efforts to secure the release from prison of Albert T. Patrick, whom it believes to have been wrongfully convicted of the murder of William M. Rice, the Medico-Legal Society requested the New York State Embalmers' Association to repeat the experiment made some time ago by Prof. H. S. Eckels, of Philadelphia. This was done in Albany, on April 19, the body employed for the purpose being one which had been embalmed for

a year, and the association has reported that, like that of Professor Eckels, their experiment showed that the testimony offered by the defense at Patrick's trial was correct. The prosecution contended that the congested appearance of Rice's lungs was due to the administration of chloroform and that it was impossible for the embalming fluid to have entered the lungs, as maintained by medical witnesses for the defense.

Work of the Milk Committee. — Dr. Paul Taylor, who, under the auspices of the Bureau of Municipal Research, was instrumental in securing many reforms in sanitary conditions in Philadelphia, has come to the city to superintend the summer campaign of the New York Milk Committee. It is announced that the subcommittee of the latter, the Committee for the Reduction of Infant Mortality, which has undertaken to raise the sum of $300,000 for the establishment and maintenance of sixty milk stations, is about to open the first of these at the Vanderbilt Clinic.

Stammering in Public Schools. — In a recent address before the Conference on Public Speaking at the College of the City of New York, Dr. E. W. Scripture said it was a question whether stuttering children ought to be permitted to mingle in the classes of the public schools, on account of the facility with which the habit of stammering, through conscious or unconscious imitation, is contracted from close association with stutterers.

The Fahnestock Training School for Nurses. — The annual commencement of the Margaret Fahnestock Training School for Nurses, attached to the New York Post-Graduate Hospital, was held on April 18, when twenty-nine women, the largest class yet graduated, received diplomas. Announcement was nade that an addition to the nurses' home, also the gift of William Fahnestock in memory of his mother, Mrs. Margaret Fahnestock, will be ready for occupancy in June. This new building, eight stories in height and situated just east of the present one, will practically double the accommodations for nurses and, in addition to dormitories, will contain an isolation ward and reception, sitting and class rooms and be surmounted by a roof garden.

Gift to the Montefiore Hospital. — Mrs. Adolph Scheftel has given $10,000 to the Montefiore Home and Hospital for Chronic Invalids to endow a ward for the treatment of patients affected with tabes. The gift is made in memory of her husband, who was a sufferer from the disease for many years.

Church, College and Hospital. — The public-spiritedness displayed in the following passage from the eloquent sermon preached by Bishop Greer, of New York, at the consecration of the choir and two chapels of the Cathedral of Saint John the Divine renders it well worth recording. The hospital referred to is the great St. Luke's Hospital, just north of the cathedral grounds, and the university, Columbia University.

"Here, then, is the value—a value beyond price — of a present-day cathedral as a force to make for righteousness in our modern life; not personal merely, but public, philanthropic and patriotic; a force that will help the people of this age and the people of this city, the representative city of the whole modern world, with all tribes, kindreds, tongues and voices coming and crowding in it, to realize more fully, and more faithfully to perform, their duty to their fellow-men and their country, through reverence for God. And here upon this eminence, the metropolitan eminence, does this our cathedral stand, with the hospital nearby as the symbol of the philantrophy of the age, with the university near-by as the symbol of the patriotic citizenship of the age; each of them to be inspired for guidance and for safety, for highest and noblest use, by that which this cathedral shall forever symbolize, encourage and promote. 'Love the brotherhood; honour the king'; philanthropy and patriotism, ethics and civics, both of them proceeding from reverence for God; shooting out on either side, in their best and purest form, as lateral branches from it."

Sanitary Condition of Bakeries. — On April 18, Mr. Fosdick, commissioner of accounts, submitted to the mayor a report which showed very unsanitary and unsavory conditions in a large number of bakeries, and recommended the transference of the supervision of all bakeries to the city. At present, it appears, the Health Department has no jurisdiction over them, and the state labor law, under which they are conducted, is very inadequate in its provisions, while at the same time these have been inadequately enforced by a small body of inspectors. In order to remedy these conditions the following amendments to the sanitary code are suggested in

the report: (1) All bakeries to be licensed by the Board of Health. (2) No rooms less than 9 feet between the floor and ceiling, and no rooms the floors of which are at a depth greater than 4 feet 6 inches below the level of the street or sidewalk adjacent to the building, to be licensed as bakeries. (3) A sanitary standard, specifically set forth in the code, to be observed in all bakeries. (4) All bakeries to be carefully and regularly inspected by the inspectors of the Department of Health, for the purpose of securing conformity to the requirements of the sanitary code. (5) The Board of Health to have power to close and seal any bakery not conforming to its orders after forty-eight hours.

Proposed Hospitals in the Bronx. — The State Board of Charities has refused to give its approval of the incorporation of the Bronx Hospital, a new institution which Dr. A. Jacobi and a number of other physicians, all but two of whom are residents of the Borough of Manhattan, desired to establish in a congested district of the Bronx. At a hearing on the subject which the board held some weeks ago, several prominent Bronx physicians objected strongly to the project, and a local movement for a hospital there is now said to have been started.

The Price of a Quart of Blood. — In answer to an advertisement of Mount Moriah Hospital recently, offering $25 to a suitable person willing to yield a quart of blood for a transfusion operation, more than one hundred applicants presented themselves. Although the advertisement called for men only, there was one woman among them, and she claimed to be in such fine condition that her system would stand the drain as well as that of any male.

Efficacy of Campaign against Tuberculosis. — In answer to the question repeatedly asked the State Department of Health, "Do the results obtained from the anti-tuberculosis campaign warrant this expenditure of time, money, energy and ability?" the last *Monthly Bulletin* of the department states that as a result of about three and one-half years of work of the united forces of the Health Department and the State Charities Aid Association, the facts seem to show conclusively that the work is worth all that has been put into it, and is worthy of still more money and effort on the part of the two organizations and of every individual in the state. In the way of general summary it is mentioned that 54 counties have been reached by some exhibit, and that in these counties 330 cities and villages have been visited and a total attendance of 1,430,531 secured, resulting in provision for 16 county hospitals, preparation already made for 8 others, and 18 counties now considering the establishment of hospitals, 30 visiting nurses, 24 dispensaries either in operation or provided for. While it is acknowledged that figures may be made to prove almost anything, tables and statistics are presented which appear to warrant the inference that already the campaign has had some appreciable effect on the mortality from tuberculosis. The *Bulletin* then goes on to say: "The department is glad to be able to make this report and to show that its use of the special appropriations for tuberculosis work is producing material and gratifying results. . . . No question exists regarding results, but further results cannot be expected unless more appropriation is made for this purpose by our legislature. Other states have seen fit to appropriate as high as $2,000,000 for the control of this disease, and New York state should not be the last to provide funds available for the eradication of a preventable disease which yearly takes away 14,000 people and costs the state $64,000,000."

## Current Literature.

### Medical Record.

April 15, 1911.

1. Thacher, J. S. *Purpura.*
2. Swan, W. H., Powers, C. A., and Pershing, H. T. *An Unusual Case of Fracture of the Bodies of the Fourth, Fifth and Sixth Cervical Vertebræ, with Injury of the Spinal Cord.*
3. Furniss, H. D. *Report of Four Cases of Ureteral Calculus.*
4. Thomas, W. S. *Metallic Foreign Bodies in the Tissues; A New Telephonic Searcher.*
5. Funke, J. *Embolism and Thrombosis of the Pulmonary Artery. Report of Three Cases — One of Embolism and Two of Thrombosis.*
6. McDonald, E. *Sterilization of the Skin by a New Iodine Solution.*
7. Mills, H. B. *Report of a Case of Congenital Cystic Degeneration of the Kidney.*
8. Dawbarn, R. H. M. *Short Talks with My Students and Others; Being Random Suggestions for the Younger Practitioners.*

### New York Medical Journal.

April 8, 1911.

1. Peabody, G. L. *Address to the Training School for Nurses of the New York Hospital.*
2. Wright, J. *A Contribution to the Study of Fats and Lipoids in Animal Tissue.*
3. Stevens, G. T. *A Series of Studies of Nervous Affections in Relation to the Adjustments of the Eyes.*

4. GORDON, A. *Psycho-Analysis as a New Therapeutic Procedure in Psychoneuroses.*
5. FRANKLIN, M. W. *Ozone.*
6. *SUGGETT, O. L. *Cacodylate of Sodium in the Treatment of Syphilis.*
7. SCHIRRMANN, H. A. *Sodium Cacodylate in Syphilis.*
8. MCLAUGHLIN, J. A. *Rabies.*
9. BELL, F. MCK. *Morphinism and Morphinomania.*

6. Suggett reports ten cases of syphilis which he treated with injections of cacodylate of sodium. He found this remedy of little benefit in the primary and early secondary stages; in fact, the effect was irritative rather than resolutive. In two later cases the good effect was unquestionable, and in one case of congenital syphilis it was astonishing. [L. D. C.]

APRIL 15, 1911.

1. GANT, S. G. *A Brief Consideration of the Causes and Treatment of Rectal Constipation and Obstipation.*
2. FOX, H. *Symptomatology of Leprosy.*
3. NEWMAYER, S. W. *Evidences that the School Nurse Pays.*
4. STEINHARDT, I. D. *Anterior Polio-encephalitis.*
5. POPE, C. *An Instructive Case of Syphilis Followed by Paresis.*
6. PRICE, G. E. *Etiology of the Functional Nervous Diseases.*
7. LYNCH, J. M. *Duodenal Ulcer.*
8. SCHMITT, E. *The Importance of Nasal Breathing.*
9. HARTZ, H. J. *The Rôle of Acute Bronchitis, Exacerbations and Remissions in Pulmonary Tuberculosis.*

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

APRIL 15, 1911.

1. *DEAVER, J. B. *Chronic Pancreatitis; Symptomatology, Diagnosis and Treatment; Based on Study of Thirty-Eight Cases.*
2. KENDALL, A. I. *Intestinal Bacteriology; A Summary.*
3. *WESTON, P. G., AND KOLMER, J. A. *Treatment of Suppurative Otitis Media (Scarlatina) by Bacterial Vaccines (Bacterins), Based on One Hundred Cases Treated in the Philadelphia Hospital for Contagious Diseases.*
4. KING, J. M. *Multiple Myeloma with Albumosuria. Report of Case.*
5. WOOD, F. M. *An Emergency Culture Medium for Use in Practice.*
6. WASHBURN, R. G. *Systemic Blastomycosis. Report of a Case.*
7. BLACK, W. D. *An Improved Tonsil Snare.*
8. CANNADAY, J. E. *Simple Drop Method of Giving Rectal Enemas of Normal Saline Solution.*
9. LEDBETTER, R. E. *Venereal Prophylaxis in the United States Navy.*
10. GASKILL, H. K. *Some Etiologic Factors and Treatment of Furunculosis.*
11. SIMONDS, J. P. *An Epidemic of Typhoid Fever, with Isolation of B. Typhosus and B. Coli from the Water Supply.*
12. FLETCHER, J. P. *A Rational Indication for Bacterial Vaccines in Typhoid Fever, with Report of Fourteen Cases.*
13. HARRIS, M. L. *Resection of Spermatic Plexus for Relief of Certain Forms of Dysmenorrhea.*
14. WILLIAMS, T. A. *A Convenient Method of Testing the Visual Fields for Color without the Use of the Perimeter, for Application in Cases of Suspected Increased Intracranial Tension.*
15. PETERS, W. H. *A Simple Method of Cultivating the Morax-Axenfield Diplobacillus.*

1. Deaver considers that the relation of sex to chronic pancreatitis as compared with cholelithiasis is reversed. In view of the predominance of biliary infections in the female, this fact is significant as showing that there must be some essential difference in the factors which produce infection in the ducts of these closely situated viscera. No definite relation to eating or to any particular articles of food is evident in this disease. Sailer, however, finds that glucose is particularly distressing to patients suffering from chronic pancreatitis. The occurrence of nausea and vomiting occurring in attacks over persistent intervals is an important symptom. Painless jaundice associated with rapid wasting and loss of strength often leads even the expert to believe the patient is suffering from cancer, and operation is withheld which might result in a cure. Operation of an exploratory nature is, therefore, always indicated. Physical examination seldom affords much positive information. The treatment is essentially surgical in every case, with drainage of the biliary passages, early, before complications create a mortality.

3. Weston and Kolmer conclude from their work with vaccines in otitis media that the best time for the commencement of vaccine treatment is from the eighth to the sixteenth day of the discharge. Continued high fever, nephritis, toxemia and various intercurrent affections are contra-indications to the use of vaccines. Under vaccine treatment three times as many patients are cured within thirty days and permitted to go home as under the usual treatment. In general, cases of otitis media offer a fruitful and encouraging field for the employment of vaccines. [E. H. R.]

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

MARCH, 1911.

1. THAYER, W. S. *On the Presence of a Venous Hum in the Epigastrium in Cirrhosis of the Liver.*
2. *CHENEY, W. F. *The Diagnosis of Duodenal Ulcer.*
3. *ABT, I. A., AND STROUSE, S. *Observations on Traumatic Diabetes in Children.*
4. *CONNER, L. A. *Biot's Breathing.*
5. *MUSSER, J. H. *The Myogenic Doctrine of Cardiac Activity and Its Relation to Arrhythmia.*
6. HOSKINS, R. G. *The Interrelation of the Organs of Internal Secretion.*
7. *FULLER, W. *Further Observations on Acetabular Fracture, with Intrapelvic or Central Dislocation of the Femoral Head.*
8. *WARTHIN, A. S. *Congenital Syphilis of the Heart.*
9. *GOLDENBERG, H., AND KALISKI, D. J. *Personal Experiences with the Use of Salvarsan (Dioxydiamidoarsenobenzol, or "606") in the Treatment of Syphilis.*

1. Thayer reports a case of hepatic cirrhosis with hematemesis and anemia in which he repeatedly heard a loud venous hum in the epigastrium immediately below the xiphoid, persisting for five years under observation, but absent in the last examination shortly before death, when marked ascites was present. A search through literature showed a considerable number of similar observations.

2. Cheney's article is an excellent didactic discussion of the present teachings as to the diagnosis of duodenal ulcer, with illustrative case reports. Following Moynihan, Cheney lays stress chiefly on the clinical history.

3. Abt and Strouse report two cases of diabetes following trauma in children. Both of these cases, in spite of continuous glycosuria and the occasional presence of acetone and diacetic acid, continued robust, in apparently good health, in marked contrast to the usual severe course of diabetes in children. Careful experiments were made to determine if possible any differences in metabolism from that of ordinary diabetes, but no such differences were found. The use of fresh vegetables and of the Von Noorden gruel resulted in raising strikingly the tolerance for carbohydrates.

4. Connor discusses the irregularity of respiration known as Biot's breathing, which differs from Cheyne-Stokes breathing in the absence of gradually increasing and diminishing movements, presenting rather more or less periodic deep dyspneic respiration, with intervals of apnea. Connor reports seven cases showing this type of breathing with tracings. Six of these were cases of meningitis and the seventh may have been meningitis. Twenty-four other cases of meningitis failed to show Biot's breathing.

5. Musser's article is a summary of the more recent studies of the disorders of muscular action of the heart which have resulted from the application of physiological

analyses to clinical cases, notably by Wenckebach and by Mackenzie. The article contains no original additions to the subject but can be recommended as a fairly clear and complete statement of current teachings.

5. Hoskins has made a critical study of literature as to the interrelation of organs of internal secretion, and in this paper discusses the findings as to the thyroid. He concludes that most of the available evidence indicates that the thyroid stimulates the adrenals; that hypothyroidism causes hypertrophy in the pituitary; that there is a relation between the thyroids and the gonads which are probably stimulated to normal activity by the thyroid; and that the suggested relation between thyroid and thymus is supported only by meager and conflicting evidence.

7. Fuller calls attention to the subject of fractures of the acetabulum, a rare injury and one which is not sufficiently recognized. He reports two cases, one reduced with satisfactory end result, and the other first seen and diagnosed by Schiller eleven months after the injury involving permanent disability. The fracture is produced by force transmitted through the femur, particularly if the femur is in abduction, forcing the head of the femur through the acetabulum into the pelvis. Abnormal fragility of the acetabulum may play a part. The symptoms and signs may be so slight that neither fracture nor dislocation are believed to exist; certain recognition may be possible only by x-ray. But in some instances a deeply sunken trochanter, shortening with eversion, and palpation of the head of the femur in the pelvis in low abdominal or rectal examination, may at once justify a positive diagnosis. Reduction may be effected by lateral traction on a band around the upper end of the thigh.

8. Warthin describes an especial form of interstitial myocarditis due to the presence of the spirocheta pallida and resulting from congenital infection, observed by him in twelve cases. Characteristic macroscopic changes were, as a rule, absent, but on microscopic examination throughout the myocardium were seen light-staining patches of fibroblastic tissue containing peculiar degenerating cells of fibroblastic or epithelioid type, with infiltration of plasma cells, especially about the smaller arterioles and capillaries. The muscle fibers in the neighborhood showed a peculiar pale degeneration. Spirochetes were demonstrated in great numbers.

9. Goldberg and Kaliski report their experiences with salvarsan in the treatment of syphilis. They have found that the rapid disappearance of lesions of syphilis after a single injection of the drug has been striking. They do not believe, however, that the infection can be permanently eradicated with certainty in one *coup* with the present mode of application and dosage. Their present opinion is that, until it is shown that repeated doses of salvarsan can be given with safety, when the Wassermann reaction remains positive after the second injection of a full dose, mercurial treatment should be instituted even in the absence of manifest symptoms. [F. W. P.]

## British Medical Journal.

### March 25, 1911.

1. *Rankin, G. *A Post-Graduate Lecture in Indigestion.*
2. *Rowlands, R. P. *Remarks on Hourglass Contraction of the Stomach.*
3. Farquhar, G. G. *Acute Dilatation of the Stomach; Gastrotomy; Recovery.*
4. Maylard, A. E. *The Treatment of Appendiceal Abscess with Pure Carbolic Acid and Iodoform.*
5. Leggett, W. *A Case of Idiopathic Dilatation of the Colon.*
6. *Thompson, T. G., and Ross, R. *Some Experiments on Cold-Chamber Treatment.*
7. Stevens, A. *An Analysis of 326 Cases of Asiatic Cholera.*
8. Short, A. R. *The After-History of Thirty Cases of Movable Kidney Treated by Operation.*
9. Gordon, W. *The "Cardio-Splanchnic Phenomenon" of Abrams.*

1. Rankin, in a general lecture on indigestion, describes "sthenic" indigestion, which apparently corresponds to our hyperacidity and which he treats in much the same way; "asthenic" indigestion corresponding to our hypo-acidity, and "fermentative" indigestion.

2. Rowlands discusses in detail some cases of hour-glass stomach with operation and then briefly discusses the pathology, diagnosis and treatment.

6. Thompson and Ross describe their experiments in cold-chamber treatment. After briefly discussing the subject in general and the previous work done on it, they give the details of their experiments on animals infected with trypanosomes. They found that animals subjected to the cold treatment did not develop the disease so quickly and that they lived longer.

8. Short analyzes the after-history of thirty cases of movable kidney treated by operation. The operations performed were the (1) transcortical suturing, 13; (2) fixation by capsule only, 8; and (3) pure carbolic acid and an iodoform gauze sling, 8. In twenty cases complete or considerable relief was afforded; in four the kidney worked loose; in several of the failures the cause was mistaken diagnosis. [J. B. H.]

## Deutsche Medizinische Wochenschrift. No. 11.

### March 16, 1911.

1. Friedberger, E. *Anaphylaxis, with Special Regard to Its Importance in Infection and Immunity.*
2. Aschoff, L. *The Question of Auto-Infection. Remarks on the Article by Dr. Ahlfeld in No. 7 of this Journal.*
3. Plesch, J. *The Biologic Effect of Radium Emanation.*
4. *Wechselmann. *Simplification of the Technic of Intravenous Injections of Medicinal Preparations, Especially Salvarsan, through a Small Automatic-Working Ball Valve Apparatus.*
5. Miessner. *The Cause of the Poisonous Effect of Acid Salvarsan Solutions.*
6. Levy, E. *A Contribution to the Question of Vaccination.*
7. Hatzfeld. *Domestic Quartan Malaria.*
8. Callmann, R. *A New Method of Diagnosing Stenosis of the Large Intestine or Esophagus.*
9. Harrass, P., and Suchur, W. *An Angioma of the Parotid.*
10. Hoeniger, E. *Ephemeral Traumatic Glycosuria in the Newborn.*
11. *Jacobsohn, E. *A Simple Apparatus for Passive Joint Movements.*
12. Meyer, K. *The Disinfecting Action of the Tooth Paste Albin.*
13. Möllers, B. *Observations on Dr. K. Henser's work: "A Case of Tubercular Warts of the Skin and a Tubercular Lymphangitis caused by Bovine Tubercle Bacilli."*
14. Wieting. *Complete Congenital Lack of Teeth.*

4. Wechselmann describes in detail and presents two descriptive pictures of a new apparatus he has for subcutaneous or intravenous injections. One of its great advantages is the rapidity with which injections can be made. Thus, in one and one-half to two minutes, the same amount of salt solution may be injected as usually takes fifteen to twenty minutes. The method of using it is very simple.

11. Jacobsohn, in an article well illustrated, describes his device for passive motion. The device is not complicated and can be used by the patient, as it is so arranged that if passive motion of the arms or hands is desired, the feet and legs can do the work, and vice versa. [C. F., Jr.]

### No. 12. March 23, 1911.

1. Sternberg, M. *The Treatment of Leukemia.* (*Clinical Lecture.*)
2. *Fraenkel, A. *Tumors of the Lung and Pleura.*
3. Körte, W. *The Treatment of Cysts and Pseudo-Cysts of the Pancreas.*
4. *Brauer, A. *Primary Erythema after Röntgen Ray.*
5. Calmann, A. *The Importance of Cystoscopy for the Diagnosis and Treatment of Pyelitis in Pregnancy.*
6. Japha, A. *Retinal Findings in Hereditary Syphilis.*
7. Röthler, G. *A Case of Buhl's Disease.*
8. v. Mabschalkó, T. *In What Concentration Shall We*

*Use the Salt Solution in Intravenous Salvarsan Injections?*

9. STAPLER, D. A. *The Technic of Intravenous Injection of Salvarsan.*
10. SELLEI, J. *Acute Thyroiditis after Use of Potassium Iodide.*
11. MUHLENS. *Final Report on the Fight against Malaria in Wilhelmshaven and Vicinity.*
12. HOFMANN, W. *History of Medicine: From the Writing of Peter Dionis on the Procreation and Birth of Man.*

2. Fraenkel takes up the subject of differential diagnosis of tumors and aneurysms in the thoracic cavity. The diagnosis between tumor and aneurysm is difficult at times, and the differentiation of the kind of tumor is frequently impossible. He reports four cases of pleural tumor and describes the pleural endothelioma and discusses the place it should hold in the classification of tumors.

4. The primary erythema due to the Röntgen ray Brauer thinks is independent of the kind of apparatus used or the quality of the rays. It is not due to the warmth of the rays, the ultraviolet rays or the fluorescent light or electrical reactions, but to the Röntgen rays themselves. It seems to be independent of the character of the individual's skin. The intensity of the erythema depends upon the strength and length of rays, as does also the incubation period. The early pigmentation after x-rays depends in part on the result of the erythema and in part on stimulation of the existing pigment qualities of the skin.

[C. F., JR.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 12.

MARCH 21, 1911.

1. *KEHR, H. *General Fundamentals of the Diagnosis' Indications and Treatment of Cholelithiasis.*
2. *EBSTEIN, W. *Cardiac Insufficiency in Chronic Constipation, with Observations on the Albuminuria and Cylindruria Occurring Therewith.*
3. AULHORN, E. *The Use of Pantopon in Obstetrics.*
4. BARADACHEI, F. *The Technic of Inflation of the Stomach.*
5. BRASCH, W. *Muscle Dystrophy and Myotonia after Injury.*
6. LANGSTEIN, L. *The Knowledge of Intestinal Eosinophilic Crises in Infancy.*
7. GOODMAN, E. H. *The Isolation of Copper from the Urine and Sweat of a Brass Worker.*
8. SORENSEN. *The Value of the Pyocyanase Treatment in Persistence of Diphtheria Bacilli.*
9. SCHMIDT, W. *Banti's Disease in Hereditary Syphilis and Its Treatment with Salvarsan.*
10. HAUPTMANN, A. *A Simple, Practicable Apparatus for the Intravenous Injection of Salvarsan in General Practice.*
11. BERTRAM. *A Typical Injury from Skiing.*
12. SCHNITTES. *The Technic of the Ring-Test.*
13. ROLLY, F. *Paratyphoid Infections.* (Conclusion.)
14. LÜMING. *Rudolf Ulrich Krönlein.*
15. LIEBE, G. *Diet Therapy in Sanatoria for Pulmonary Disease.*
16. GOLDSCHMIDT, J. *The Cholera in Madeira.*

1. In the light of his great experience, Kehr discusses briefly the indications, positive and relative, for operation in cholecystitis. He says that latent stones need not necessarily be removed unless cancer has appeared in the family, that when a stone has entered the ducts operation should be resorted to before three months have passed in order to obviate the danger of complication, and that for empyema of gall bladder or chronic obstruction, operation should be urged because life is threatened and spontaneous cure is rare. The danger for the operation at the hands of the experienced is slight unless complications have arisen, but these add greatly to mortality and are avoidable by earlier intervention.

He attributes the symptoms to inflammation, infection and obstruction rather than to the stones directly, and he makes the diagnosis of cholecystitis, cholangitis, or adhesions rather than gallstones because in about ten per cent of cases these conditions occur without stones.

2. Ebstein says that when the width of cardiac dullness is increased it should be seen whether this may not be due to a high diaphragm. If so, associated cardiac insufficiency can be relieved if the cause of the high diaphragm can be cured. Chronic constipation is one of these causes. It may also cause albuminuria and cylindruria. Therefore, before a bad prognosis is given, chronic constipation should be corrected if present. [G. C. S.]

No. 13. MARCH 28, 1911.

1. *HOFFMANN, E. *Contributions on Experimental Syphilis.*
2. *CALVARY, M. *Anaphylaxis and Production of Lymph.*
3. STRÖBEL, H. *The Serodiagnosis of Trichinosis.*
4. NEUBAUER, O., AND FISCHER, H. *The Question of the Value of the Glycyl-Tryptophan Test in the Diagnosis of Gastric Cancer.*
5. SÖRENSEN. *Recurrence of Diphtheria.*
6. MEISSNER. *Simultaneous Infection with Scarlet Fever and Typhoid.*
7. KISCH, E. H. *Lipogenic Diabetes.*
8. CRAMER, H. *The Cause of Incarceration in Retroflection of the Pregnant Uterus.*
9. ISAAC, H. *Experiences with Salvarsan.*
10. GROEDEL, F. M. *The Condition of the Heart in Congenital Funnel-Breast.*
11. THOMSCHKE. *The Use of the Mastic Bandage and of Blunk's Hemostatic Forceps.*
12. v. OETTINGEN. *Contribution to the Treatment of Wounds with "Mastisol."*
13. LASER, E. *Thyreotoxic Symptoms and Their Treatment with Antithyreoidin.*
14. MITTELACHER, O. *Obstetrics in München a Century Ago.*

1. Hoffmann tells of his experimental work with syphilis inoculated into monkeys and guinea pigs. His results are interesting and important.

2. In summarizing his results, Calvary says that dogs which have been treated with horse serum and reinjected two weeks later show a marked increase in the quantity of lymph. This lymph does not clot. Barium chloride and calcium chloride have no effect on this phenomenon.

[G. C. S.]

ARCHIV FÜR KLINISCHE CHIRURGIE. BD. 94.

HEFT 4. MARCH, 1911.

26. *RUGE, E. *Intestinal Obstruction in and after Perityphlitis.*
27. *HADDA, S. *Establishment of Arteriovenous Anastomoses with Preservation of the Circulation.*
28. *STERN, C. *Sarcoma of the Os Calcis.*
29. *STIEDA, A. *Contributions to Free Bone Plastic.*
30. *KRON, N. *A Case of Resection of the Left Lobe of the Liver.*
31. *GALPERN, J. *The Permanent Results of Gastric Operations in Benign Affections.*
32. *v. HABERER, H. *The Question of Primary Resection of the Large Intestine.*
33. *v. FRISCH, O. *Some Observations on the Technic of Tendon Suture.*
34. *LEWIN, L. *The Toxic Character of Metallic Lead, and Especially of Lead Bullets in Animal Bodies.*

26. From a careful study of 18 selected typical cases of appendicitis from Körte's clinic at Berlin, Ruge reaches the conclusion that early operation alone avoids abscess formation and peritonitis and that it affords the only possibility of preventing extensive adhesions. He believes that it is just as safe as the interval operation, and that it has the advantage of greater promptness, often of easier technic.

27. Hadda reports 27 cases of experimental arteriovenous anastomosis in dogs. He describes the technic and discusses the relative merits of end-to-end, end-to-side, and side-to-side anastomosis.

28. Stern reports two cases of sarcoma of the os calcis, and collects an admirable bibliography on the subject.

29. Stieda reports two cases, the first of resection of the upper half of the humerus for cystic tumor with spontaneous fracture, the second of pseudarthrosis of the left leg following osteotomy for deformity after intra-uterine

fracture. The former was treated by autoplastic from the tibia, the latter by three heteroplastics from an exostosis, from the ulna of a traumatically amputated forearm, and from the tibia of an amputated leg. The results in both cases were anatomically and functionally excellent.

30. Kron reports a successful resection of the left lobe of the liver for gumma, and concludes that the liver can be operated on as well as other parenchymatous organs.

31. Galpern analyzes the statistics of 175 gastric operations for benign disease from Spassokukotzky's clinic at Smolensk. There was a total mortality of 4%. End results after from one to nine years were observed in 128 cases.

32. v. Haberer reports 19 cases of primary resection of the colon from v. Eiselsberg's clinic at Vienna. There were in the series three operative deaths. The author comments on these and discusses indications and technic.

33. Discussing the technic of tendon suture, v. Frisch emphasizes the importance of early mobilization of the sutured tendon which is made possible by his new and reliable form of stitch.

34. Lewin considers the effects of metallic lead in the body, and advocates the early removal of lodged lead projectiles as a prophylactic against absorption.

[R. M. G.]

ANNALES DE L'INSTITUT PASTEUR.

FEB. 25, 1911.

1. *NICOLLE, C., CONOR, A., AND CONSEIL, E. *Experimental Investigations on Typhus Fever Undertaken at the Pasteur Institute at Tunis during the Year 1910.* (Conclusion.)
2. DUCLAUX, J., AND HAMELIN, A. *Observations on the Use of Collodion Filters.*
3. NICOLLE, M., AND LOISEAU, G. *The Toxic Factors in Bacteria. I. A Study of the Diphtheria Bacillus.*
4. BRÉAUDAT AND DENIER. *Rice Bran in the Prophylaxis and Treatment of Beri Beri.*
5. TRUCHE, C., AND ALILAIRE, E. *Hereditary Immunity of the Horse against Ricin.*

1. In this number of the *Annales* a description of more of the work done on typhus fever last year at Tunis appears. They describe their work on deciding on the properties of the virus. They consider that it is an ultramicroscopic virus. It offers certain peculiar characteristics when filtered which seem to depend somewhat on the method by which the serum is obtained from the blood containing the virus. In certain cases they have had positive results with a filtered virus. They find that it is destroyed at about 50 to 55° C. In vitro serum apparently has no action upon the virus. They then take up a discussion of their or others experiments on the etiology and immunity of the disease. This is followed by the blood picture in monkeys during the experimental disease which shows at first an increased leucocyte count in the early incubation period, a return to normal at the end of the incubation period, with another rise at the beginning of the fever period. Then follows a short description of typhus fever in humans and infants.

Conclusions covering their whole year's work end the article. [C. F., JR.]

PROGRESSIVE MEDICINE. VOL. XII, NO. 1.

MARCH, 1911.

1. FRAZIER, C. H. *Surgery of the Head, Neck and Thorax.*
2. RUHRÄH, J. *Infectious Diseases, including Acute Rheumatism, Croupous Pneumonia and Influenza.*
3. CRANDALL, F. M. *Diseases of Children.*
4. KYLE, D. B. *Rhinology and Laryngology.*
5. DUEL, A. B. *Otology.*

This "quarterly digest of advances, discoveries and improvements in the medical and surgical sciences," edited by Drs. Hobart A. Hare and Leighton F. Appleman, of Philadelphia, presents a compendious, readable summary of current literature on the subjects in question, mostly from the second half of 1910. Much of the material has been reviewed in this department of the JOURNAL. The volume, in which also a few good illustrations are reproduced, is a useful "abstract and brief chronicle" of recent progress in medicine.

## Miscellany.

### IN MEMORY OF HENRY P. BOWDITCH, M.D.

THE following memorial note on the life and services of Prof. Henry P. Bowditch has been prepared for the American Physiological Society by a committee of its members.

At the death of Henry Pickering Bowditch there passed away a man who had notable influence on the development of medical and biological science in America. He was born in Boston, April 4, 1840, and was graduated from Harvard College in 1861. As a graduate he began the study of chemistry in the Lawrence Scientific School, but left, in November, 1861, to become second lieutenant in the First Massachusetts Cavalry, then starting for the front. After loyal and chivalrous service to his country during the remaining three and a half years of the Civil War, he resumed his studies in Harvard University and received, in 1868, the degree of Doctor of Medicine. Thereupon he went to France and Germany to learn from the masters of his chosen science, physiology, the aims and methods of research. Filled with the spirit of Bernard and Ludwig, he returned to the Harvard Medical School in 1871 and established the first American physiological laboratory for the use of students, a laboratory which soon proved hospitable to investigators in every phase of experimental medicine. For thirty-five years he was an energetic and inspiring teacher, and a leader in investigation. His studies of the peculiar functions of cardiac muscle, the indefatigability of nerves, the knee-jerk and conditions affecting it, the force of ciliary activity, and the growth of children, illustrate the range and originality of his researches. Apparatus invented by him and widely used in physiological laboratories attest his mechanical ingenuity. He was one of the founders of the American Physiological Society and was its second president. The traditions of the society, particularly its character as an association to encourage research, are largely the result of his initiative. His example and his genuine appreciation of new work as it was reported at meetings of the society were a wholesome stimulus to young men beginning physiological investigation.

To the larger interests of medicine he rendered important service by promoting reforms in medical education, notably by advocating and helping to introduce the four years' required course, and later by strongly urging greater freedom of election in medical study. The Harvard Medical School he served as dean for a decade of important growth, and the development of the school will long continue in directions which his wisdom foresaw. Among the most valuable of his activities was his repeated defense of animal experimentation against unreasonable legislative restrictions, an activity in which he secured victories likely to preserve freedom of medical research for many years to come.

The honors received by Dr. Bowditch were

many. He was a member of numerous learned societies in this country and abroad. He was a doctor of science at the University of Cambridge, and a doctor of laws at Edinburgh, Toronto, Pennsylvania and Harvard. In 1900 he was president of the Triennial Congress of American Physicians and Surgeons.

With sure and sober judgment Dr. Bowditch combined vigor and readiness of action which made him a natural leader. He was a never-failing source of stimulation and encouragement to all progressive movements aimed at professional and civic improvement, and his mind was fertile with ingenious and effective ways to secure the accomplishment of worthy ends. These qualities of leadership were combined with other qualities — keen interest, unfailing courtesy, fairness and good will — that won for him not only the friendship and life-long devotion of the foremost men of medical science in this country and abroad, but also the affection of his students and close associates. From the days of his youth, when he began the struggle for ideals, to his last years of failing strength, he met what life brought him with courage and cheerful humor; and he passed away as much loved for the beauty and strength of his character as he was admired for his achievements.

S. Weir Mitchell, *Chairman.*
Russell H. Chittenden.
William H. Howell.
Walter B. Cannon, *Secretary.*

## ANCIENT REMEDIES FOR TOOTHACHE.

An item in the Dundee *Advertiser* quotes the following remedies supposed to have been employed by the ancient Romans for toothache:

"Take the head of a dog that has died of rabies, mix the ash with oil of Cyprus and inject the product into the ear of the affected side. A water snake's vertebra will serve to scarify the gum provided that it be obtained from a white skinned snake. Or for the same purpose may be used a lizard's frontal bone obtained when the moon is full, or, if that fail, a chicken bone will do, provided that it be dried in a hole in a wall and thrown away immediately after use. It is good treatment to inject into the ear oil of lemon, in which has been macerated either mallow bugs or sparrows' dung, even should this last give rise to itching. A worm fed on a particular herb or a cabbage caterpillar can conveniently be placed in a hollow tooth, but it is equally simple to chew an adder's heart. Prevention being better than cure, a sovereign preventive will be found in the eating of two rats a month."

It is probably true that a person with a severe toothache is usually ready to adopt almost any measure for its alleviation. The above prescriptions, however, are no doubt fair samples of much medieval necromantic therapeusis, and suggest the

"Eye of newt and toe of frog,
Wool of bat and tongue of dog,
Adder's fork and blind-worm's sting,
Lizard's leg and owlet's wing,"

of the witches' incantation in "Macbeth."

## THE USE OF CONDENSED MILK.

The Milk and Baby Hygiene Association of Boston has recently issued a report of its investigations into the use of condensed milk as a food for infants. The unfitness of condensed milk for this purpose is well recognized by the medical profession, but the popular statement of the fact in this bulletin may perhaps be of benefit. Moreover, the association finds that "if condensed milk be diluted with enough water to make a quart of Massachusetts standard milk, containing 3.35% of fat, the actual cost of the renovated fluid exceeds the price of ordinary milk, and in some cases that of certified milk." Economically, as well as hygienically, the use of condensed milk would seem to be undesirable except for occasional purposes of convenience.

# Correspondence.

## PARIS LETTER.

### Tincture of Iodine as a Surgical Antiseptic.

*[From Our Special Correspondent.]*

Paris, April 11, 1911.

*Mr. Editor:* One of the most surprised preparations in materia medica at the present moment must be our time-honored acquaintance, the tincture of iodine, and there is no gainsaying the fact that it has sufficient grounds for a meditation on the uncertainty of the things of this world. During all the earlier half of the last century this familiar reddish-brown liquid was one of the most important remedies in medical practice, so much so that in 1855 a certain Boinet published a large volume of eight hundred and thirty-five pages about it, entitled "*Traité d'Iodothérapie.*" Already at that time its remarkable antiseptic properties had been noted; fetid pus had been seen to lose its noxious qualities under its influence, and compound fractures had been found to heal without any of the terrible complications so frequent in those times when treated with tincture of iodine. In a word, it seems as though at that period the antiseptic era was on the point of being discovered, in connection with this preparation, some twenty years before the Pasteur-Lister day. The opportunity was there; all that lacked, apparently, was the man with sufficient perspicacity to descry the great discovery that was staring him in the face. That man, however, was not forthcoming. The reign of phenol, sublimate, formal and peroxide began, iodine tincture was practically relegated to the old woman's arsenal, and this marvelous preparation descended very nearly to the level of arnica and chamomile tea!

This period of oblivion lasted for nearly forty years, but now, by the agency of one of those disconcerting turns of the wheel of fortune, tincture of iodine has once more been raised to a position of real eminence in medicine, and suddenly, — within the brief space of a couple of years. In this short time it has not only regained the rank in the medical world that it ought never to have lost, but its penetration into the masses has been so deep that it has attained even to such remote regions as the cerebral substance of society women. One of them got her finger-end caught in the door of her carriage the other day and gave it a pretty lively squeeze, producing a small wound *par éclatement.* When I arrived I remarked in scornful tones, "What in the world did you put arnica on it for?" She was generous in her triumph, that I must allow; for of course she had a lovely chance to make some withering reply. All she said was, "Oh no! that isn't arnica; I drove to the nearest druggist and had the finger painted with iodine!" "The devil you did," thought I; "if these Red Cross lectures continue to rage throughout the land, the future of the medical profession will soon be even less roseate than it seems at present. For the idea is to me not inconceivable that within a delay

that is really more or less proximate, the physician is going to have to make his choice between some of the side-branches of his calling, — electricity, radium, x-rays, or mind-treatment, — or harakiri after the scorpion method. Certainly if I had a son who was going in for general medicine, the utmost degree of sympathy at my disposal would be extended toward him, as I think he will see the time when his profession will no longer be a living proposition.

Tincture of iodine, then, has been discovered to be the most marvelous antiseptic known, and, — details that enhance its virtues many times over, — one whose use is simplicity itself, that can be found anywhere and that can be safely put into almost any one's hands. From one point of view it has a similarity with salvarsan in that it is of particular use in very difficult cases, cases that proved almost beyond the resources formerly at our disposal. This will be referred to in a moment; for the present let me cite an instance or two that have come to my ears recently.

One of the younger surgeons here received an urgency call the other day to come at once to such and such a hospital for an amputation. When he arrived he found a man who had got his right hand badly crushed in handling wine barrels, with various fractured bones and wounds, the whole region being, of course, as dirty as possible. It had never occurred to the interne that any other treatment than amputation or disarticulation was to be considered; yet, with simple iodine paintings, this man made a perfect recovery with a quite serviceable hand.

Another surgeon friend of mine went one afternoon to see a lady patient on whom he had operated a short time previously for appendicitis. She told him that her last monthly period had missed entirely and that she was now feeling considerable pain in the pelvis. On examination he found a small mass back and to one side of the uterus, diagnosed extra-uterine pregnancy and told her she must have it removed without delay. That same evening at ten o'clock he was called to see her again; pain had increased and her condition and appearance had alarmed those about her. The fetal cyst had evidently ruptured during the evening, the patient presented all the signs of serious internal hemorrhage and my surgical friend found himself in presence of as serious an emergency case as any one need desire, as it is not easy in Paris to get anything done in a hurry. However, by dint of heating up the telephone wires he managed to get the patient transported to a clinic and his aids assembled by one o'clock. By that time his unfortunate patient's condition was highly critical, the bleeding was evidently continuing and there was no time to lose. It is easy to conceive that with the former methods of preparing an abdomen for laparotomy, the loss of time, combined with the rough handling necessary to throughly brush and scrub the skin, might have given this patient the finishing touch, whereas in this instance, while the surgeon was slipping on his sterilized India-rubber gloves, the assistant simply painted the abdominal surface gently with soft gauze dipped in tincture of iodine and held in a forceps, there was not the slightest delay or mauling of the patient, a rapid incision revealed an abdominal cavity filled with blood, the cyst was clamped at once, the usual means of treating severe loss of blood could then be brought to bear, and the surgeon was master of the situation. Such a case as this must, I think, be one of the surgeon's keenest satisfactions, a case in which he is authorized to feel that but for his intervention his patient would have succumbed without doubt in another hour or two. This same man operated an umbilical hernia in a dog for me the other day with the iodine process without even shaving the region; it seems that this is current practice in the experimental laboratories now.

The iodine tincture of the French pharmacies is a one in ten solution in alcohol. It should, whenever possible, be procured fresh; when old it is subject to two secondary processes whereby it becomes stronger and more likely to irritate: the development of hydriodic acid, and concentration through alcohol evaporation. The question is being studied whether it is really necessary to use this one-tenth solution; whether, for instance, this could not equally well be further extended with alcohol to at least one-twentieth, or whether aqueous solutions obtained with iodide will not be just as efficacious. For although it has proved to be one of the safest of all antiseptics, we all know that there are certain patients with a marked idiosyncrasy for iodine with whom small doses produce the most alarming symptoms, and in particular those of edema of the glottis. Thus in the case in point I personally have heard of one patient with whom a most distressing and persistent generalized eczema was brought on by a single application of tincture of iodine; and of another who actually succumbed from acute iodism under the same circumstances. Because, not only is the iodine being applied on normal surfaces, as in the above extra-uterine pregnancy case, or as has been done by different surgeons in emergencies when away from all facilities and they have painted their own hands in order to operate; and not only is it used on open and crushed wounds, and even on extensive denuded surfaces such as burns, but it is applied to severe solutions of continuity, such as a scythe wound, the surfaces being stitched together a few minutes later, and it is also injected into suppurating cavities or fistulas. Under these circumstances a certain amount of the iodine must remain behind; so that if an equal effect can be obtained by a less active solution, it is certainly to be desired that this point should be demonstrated as quickly as possible.

There is a trifling artifice that it is useful to know, in order to have it at one's disposal in instances when a modicum of mind-cure is necessary. Certain families keep tincture of iodine in stock and use it themselves on all occasions, just as others do their precious Pond's Extract or Antiphlogistine. One woman I know here gets Pond's Extract over from America by the demijohn, and has the most *absolute faith* in its virtues to cure nearly every affection her large household of family and servants presents. To prescribe to such a person a remedy that she is in the habit of using herself would simply be to lose caste in a very precipitous fashion; whereas if you sit down and gravely formulate

℞ Metalloidic iodine, 3
Spirits of chloroform, 30

the effect will be magical, as the druggist will sent her a beautiful cerulean blue solution which you caution her to apply with great care as it is very active, whereas it is in reality nothing but the familiar old one in ten tincture of iodine!

A point that I have been turning over in my mind is whether this preparation may not be excellent for medical use, and in particular for tonsillar affections. The peculiar efficacy of iodine tincture is said to be due to its marked power of penetration, which in turn depends on its alcoholic vehicle; to be really efficacious, then, it should be applied to a perfectly dry surface, all previous cleansing by washing, soaping, etc., impeding its action. Now in the throat a dry surface could scarcely be obtained; but by first carefully wiping off the tonsillar region something approaching such a condition could be produced; besides, the tonsil is not protected by any hard layer of epidermis. I have often used in the throat a preparation consisting in one part of tincture of iodine to two of glycerine, but have never been able to see that it accomplishes very much. This is perhaps due to a peculiarity that we find in phenol, which seems to lose many of its properties, causticity, toxicity, etc., when combined with glycerine. It will be interesting to see how the tonsil reacts to pure tincture of iodine without the glycerine.

I remarked above that the tincture of iodine is particularly effective in the very worst cases, and the type of these is the mechanic or train-hand, who gets one of his extremities mashed in the course of his work. Not only do these accidents present the very worst forms of lesions, — mangled and torn tissues, open articulations and compound fractures, — but the damaged region cannot be otherwise than in the filthiest possible condition. These cases, also, are generally somewhat long in getting to the nearest help, particularly in a railroad accident out on the line. It has really seemed to me worse than useless to attempt to clean up such an affair as a mechanic's hand mashed in a machine. Will not the cleaning send into the open wounds more germs than are there already? My surgical friend assures me that by filling up all the wounds with strips of sterile cotton soaked in some antiseptic fluid, and then operating with care, patience and benzine,

the thing can be accomplished; so I suppose we shall have to take his word for it. But however this may be, all doubts of the sort are removed with the iodine process. Here, the less you do the better. No cleaning at all; at the most remove fragments that are bound to go any how, and be chary about this, for I think that the longer we live the greater becomes our respect for what nature can do at a push, then paint everything, — skin wounds, fractures, — carefully with the tincture, not being afraid to go over a surface more than once, and pushing it into every nook and hole. Over that, *chiffonner* a lot of light gauze, then some cotton-wool, and a bandage, and the trick is done. Nothing simpler could possibly be desired, and a *trousse* of this sort, with brief directions, could easily be on every train and in every factory. Strange to say, the pain connected with the application is really insignificant; it can be spread over large burns with equal results. Fancy the revolution this process is going to effect in first-aid ambulances near the firing-line in war time!

What happens, then, after such a dressing as this? The tincture appears to give rise to a profuse serous discharge, which is taken up by the *chiffonnée* gauze, which must not be protected by any hermetic tissue. Usually such a first dressing can be left in place for twenty-four hours, though of course, if the discharge soaks through the gauze, this can always be removed, and as often as desired. The next day the dressing is changed and the tincture applied again. This daily change is continued so long as the discharge lasts, which is, as a rule, from four to five days. The surfaces then become dry and the dressing and painting need only be done every three or four days.

The cases of recovery that have been reported under this treatment sound really more like fairy tales than serious surgical work. What do you think, for instance, of a compound, comminuted fracture of the leg that had been carefully cleaned, reduced and sewed up by a surgeon, but when his effects failed lamentably and gangrene set in, this was opened by another man, thoroughly painted in every corner, *and recovered!* "S."

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, APRIL 15, 1911.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | 1,551 | 490 | Waltham | 3 | 0 |
| Chicago | — | — | Brookline | 8 | 1 |
| Philadelphia | — | — | Chicopee | 3 | 1 |
| St. Louis | — | — | Gloucester | 4 | 2 |
| Baltimore | — | — | Medford | 5 | 3 |
| Cleveland | — | — | North Adams | 8 | 5 |
| Buffalo | — | — | Northampton | 9 | 2 |
| Pittsburg | — | — | Beverly | 2 | — |
| Cincinnati | — | — | Revere | 5 | — |
| Milwaukee | — | — | Leominster | 7 | 1 |
| Washington | — | — | Attleboro | 3 | 1 |
| Providence | — | — | Westfield | 8 | 1 |
| Boston | 243 | 53 | Peabody | — | — |
| Worcester | 45 | 12 | Melrose | 4 | — |
| Fall River | 41 | 22 | Hyde Park | 5 | 2 |
| Lowell | 37 | 10 | Woburn | 2 | 2 |
| Cambridge | 39 | 10 | Newburyport | 3 | 2 |
| New Bedford | 33 | 8 | Gardner | 7 | 5 |
| Lynn | 21 | 5 | Marlboro | 7 | 1 |
| Springfield | 25 | 8 | Clinton | 1 | — |
| Lawrence | 26 | 13 | Milford | — | — |
| Somerville | 17 | 2 | Adams | 8 | 3 |
| Holyoke | 17 | 6 | Framingham | — | — |
| Brockton | 14 | 3 | Weymouth | — | — |
| Malden | 16 | 2 | Watertown | 5 | 1 |
| Haverhill | 15 | 2 | Southbridge | 0 | — |
| Salem | 21 | 3 | Plymouth | — | — |
| Newton | 3 | 1 | Webster | 5 | 0 |
| Fitchburg | — | — | Methuen | 3 | — |
| Taunton | 14 | 3 | Wakefield | — | — |
| Everett | 10 | 3 | Arlington | 2 | — |
| Quincy | — | — | Greenfield | 3 | — |
| Chelsea | 13 | — | Winthrop | 2 | — |
| Pittsfield | 8 | 2 | | | |

## SOCIETY NOTICES.

AMERICAN THERAPEUTIC SOCIETY. — The twelfth annual meeting of the American Therapeutic Society will be held in the auditorium of Building B of the Harvard Medical School, Boston, Mass., May 11, 12 and 13, 1911.

THE AMERICAN SOCIETY OF TROPICAL MEDICINE. — The eighth annual meeting will be held at the Tulane University of Louisiana, New Orleans, La., Thursday and Friday, May 18 and 19, 1911.

JOHN M. SWAN, M.D., *Secretary*,
Philadelphia.

THE BOSTON SOCIETY OF MEDICAL SCIENCES. — The next meeting will be held at the Harvard Medical School, in the amphitheater of Building D, on May 2, 1911, at 8.15 P.M. Papers will be presented as follows: Dr. Hans Aron, "Nutrition and Growth." Dr. Francis G. Benedict, "The Metabolism of Normal Women." Dr. A. W. Peters, "Some Aspects of the Problem of Estimating Sugar in Urine." Dr. Francis G. Benedict, "The Influence of the Ingestion of Food on Metabolism.

CLEAVELAND FLOYD, M.D.,
*Secretary.*

## RECENT DEATHS.

DR. CHARLES STEDMAN BULL, one of the most eminent ophthalmologists of New York, died suddenly from cardiac disease on April 17, at the age of sixty-six years. He was graduated from Columbia University in 1864 and the College of Physicians and Surgeons, New York, in 1868, after which he spent two years in the study of diseases of the eye in Europe. Dr. Bull was one of the chief surgeons of the New York Eye and Ear Infirmary, an institution on the staff of which he had been for nearly forty years, and he was consulting ophthalmic surgeon to the Presbyterian Hospital and St. Mary's Free Hospital for Children. From 1903 to 1907 he was president of the American Ophthalmological Society, and until recently was professor of clinical surgery, Department of Ophthalmology, in Cornell University Medical College.

DR. THOMAS F. SCULLY, a prominent practitioner of Rome, N. Y., and ex-president of the Oneida County Medical Society, died on April 19, at the age of fifty-one years. He was born in Greenbush, Rensselaer County, N. Y., and was graduated from the Albany Medical College in 1885. For several years he was health officer of Cohoes, and at the time of his death was surgeon to the City Hospital in Rome. At the last election in New York Dr. Scully was the Independence League candidate for Secretary of State.

DR. BARTLETT C. FROST, a retired physician of Phillipsburg, Warren County, N. J., died on April 16, at the age of eighty-one years. He had served as mayor of Phillipsburg for five terms.

DR. LEARTUS CONNOR, who died of cerebral hemorrhage on April 16, at Detroit, Mich., was born in Coldenham, Orange County, N. J., in 1843. He received the degree of M.D. from the New York College of Physicians and Surgeons in 1870. He was a member of the American Medical Association, and had practiced medicine in Detroit for many years. He was professor of physiology, clinical medicine and ophthalmology in the Detroit Medical College.

DR. ROLAND A. DAVIS, who died last week at Somerville, Mass., was born in Charlestown in 1846. He graduated from the Boston University Medical School in 1893, and had practiced medicine in Somerville since that time. He was a member of the Massachusetts Homœopathic Medical Society and of the Boston Homœopathic Medical Society.

DR. EDWIN FARNHAM, who died last week at Cambridge, Mass., was born in Philadelphia in 1843. He received the degree of A.B. from Harvard in 1866, and that of M.D. from the University of Pennsylvania in 1869. In 1874 he returned to Cambridge, and practiced medicine there until his retirement in 1908. During the last nineteen years of his active life he served as medical adviser to the Cambridge Board of Health. He was a Fellow of The Massachusetts Medical Society and a member of the Cambridge Medical Improvement Society. He is survived by one daughter and one son.

## BOOKS AND PAMPHLETS RECEIVED.

Treasury Department. Public Health Reports No. 59. Report on an Original Form of Sulphur Burner for Disinfection. By N. Roberts and F. Alex. McDermott.

Treasury Department. Public Health Reports No. 58. The Typhoid Bacillus Carrier. A review. By R. M. Grimm.

Treasury Department. Hygienic Laboratory Bulletin No. 73. The Effects of a Number of Derivatives of Choline and Analogous Compounds of the Blood-Pressure. By Reid Hunt and R. de M. Taveau.

Thirty-Fifth Annual Report of the Managers and Officers of the New Jersey State Hospital at Morris Plains, 1910.

## Original Articles.

### SCHOOL INSPECTION IN SMALL TOWNS.

BY ARTHUR TRACY CABOT, A.M., M.D.

This paper, read before the American School Hygiene Association, is published here in the hope that it may encourage the trial of this plan of school inspection in other towns throughout the state.

This is a matter in which medical men should interest themselves and should bring to the attention of the school committees in their towns.

The thesis I shall advance and discuss in this paper is that the best school inspection and supervision in towns and small communities is obtainable by a nurse alone, and I shall support this position by citing the experience gained in a two years' trial of this sort of inspection.

In 1906 the Massachusetts Legislature enacted a law that "the school committee of every city and town in the commonwealth shall appoint one or more school physicians, shall assign one to each public school within its city or town, and shall provide them with all proper facilities for the performance of their duties as prescribed in this act: and shall assign one or more to perform the duty of examining children who apply for health certificates in accordance with this act; *provided, however*, that in cities wherein the board of health is already maintaining or shall thereafter maintain substantially such medical inspection as this act requires, the board of health shall appoint and assign the school physician." (Acts of 1906, 502.)

The methods by which this act should be carried out were further prescribed by statute, and finally it was ordered that "the expense which a city or town may incur by virtue of the authority herein vested in the school committee or board of health, as the case may be, shall not exceed the amount appropriated for that purpose in cities by the city council and in towns by a town meeting. The appropriation shall precede any expenditure or any indebtedness which may be incurred under this act."

The next year the last clause in regard to the appropriation of money was revoked, but this had little effect in increasing the effectiveness of the act, for a city or town not interested in this sort of work and not appropriating sufficient money is practically not called to account.

Fortunately, in the larger places there has been enough interest to lead to a pretty general adoption of school inspection, which has been carried out in a more or less thorough manner. In the small towns, however, but little real work has been done.

The failure to appropriate sufficient money for proper inspection practically then renders the act inoperative, and it is in this way that the school inspection has been totally neglected in many places, except so far as it can be carried out by teachers.

A thorough inspection by a competent physician is a rather expensive matter and is beyond the means of many smaller places Furthermore, it has been found very difficult to obtain thorough inspection by a physician, because in small places the physician's close supervision of the children is interfered with by the professional jealousy of the other physicians in the place.

When I say professional jealousy, I do not mean to condemn the feeling. The relation of a physician to the families under his care is a close one. It is one sanctioned by long usage and it is quite natural that a physician with the greatest public spirit should object to having children whom he regards as under his care inspected and thoroughly examined by a physician appointed by political influence. It is quite evident, too, that a school physician on good terms with his brother practitioners in the town would refrain from examining children in their families because it would be contrary to his instinct to meddle in such a way with another's patients.

The adoption of the plan prescribed by law has been prevented, then, first, by the expense of inspection by a physician, and, second, by the disapproval of the medical practitioners.

These difficulties are very real ones; they cannot be ignored or overridden; they must be recognized and avoided in order to bring about a general adoption of school inspection outside of the large cities.

I think that in Canton, Mass., we have found a solution for them, and a recital of our experience will perhaps be the best way of setting before you the solution to which I refer.

Immediately after the act above alluded to was passed, Canton appropriated $200 to provide for the school inspection and appointed a school physician. This sum was manifestly not enough to pay for a thorough inspection, and the school physician contented himself with occasional services to the school committee, and but a small part of the appropriation was spent. Accordingly in the following year only $50 was appropriated. You can imagine how little inspection was carried out under such appropriations.

Considering how this situation might be met, it occurred to us that by the appointment of a school nurse we might obtain, at a sum within the means of the town, the whole time of a trained person able to make all ordinary inspection.

We also saw that a school nurse directed to refer children who were found to be sick to their own family physician and who should afterwards merely follow them up and see that they went to their doctor would avoid the danger of exciting the enmity and opposition of the medical men in the town.

We further felt that the school nurse, being able to follow the children to their homes, could carry her teaching of proper hygiene into the families and in this way be a potent factor in improving conditions about the town.

The town of Canton has two school systems — one the public schools, managed and paid for by the town; and the other the parochial school, at which rather more than a third of the children in town are taught.

The head of this parochial school, Father John J. Farrell, was approached and at once approved of the plan, saying that he would be glad to favor it in every way he could, provided we would also inspect the parochial school. This was, of course, exactly what we wished, and it insured that all of the children of the town would be under trained supervision.

At the town meeting in 1908 this plan was presented to the voters of the town with a request for an appropriation of $500, which sum was appropriated without a dissenting voice.

A trained nurse interested in this sort of work was engaged, to begin her labors at the commencement of the next school year, and the manner in which she carried out the plan was so satisfactory that at the next town meeting the sum of $950 was appropriated to cover the work of the next school year.

This plan has now been in operation for two years, and it is the opinion of those who have watched the work that we have a thoroughly efficient system of inspection and supervision.

The nurse looks after nine hundred children, examines them at the beginning of the year and records the results in a card catalogue.

She afterwards keeps a record of any illness they may have and seeks in this way to have a complete medical history of all of the children in town.

Such children as show any infirmity of eyes, ears, throat or general condition are referred to their physicians and are afterwards followed up to see that they get advice and follow it. Such children as need attention of a specialist and are unable to pay for it are taken by her to a public clinic in Boston.

In addition to this care of the children's health, she has also given talks on matters of hygiene in the schools, and her visits to the homes give her opportunities to illustrate and enforce this teaching. Many of the children were found to have bad teeth. A public lecture was given in the town upon the proper care of the mouth, and the nurse followed this up by talks to the children in the schools.

Arrangements have been made with the dentists in the town that on certain afternoons of the week they give dental treatment to poor children needing it at half price.

In the first year we had almost no contagious disease to contend with. One case of diphtheria was found and quickly isolated. No further cases appeared. At the beginning of this school year there were five cases of diphtheria in town, which had appeared during vacation, all confined to one locality. After the opening of school seven more cases appeared, all coming from the same part of the town and pupils in the two schools which cared for that section. As each child fell sick the schoolroom in which it had been was fumigated and the children having adjoining desks were given prophylactic treatment with antitoxin. There has been no evidence that the disease has been given by one child to another in the school and there has been no spread of the disease to other sections of the town.

The co-operation of the board of health which achieved this control of what threatened to be an epidemic was most satisfactory and the school attendance served as a means of keeping a close watch of the children and worked to bring about a limitation of the disease rather than to spread it.

Carried out in practice, then, we have found the work of the school nurse thoroughly satisfactory in giving the town what seems adequate inspection and control of contagious disease. The nurse has also had time to follow up such cases of tuberculosis as were known to the Anti-Tuberculosis Committee of the Nursing Association. The nurse has found in the schools ten cases of children already tuberculous and eighteen cases of ill-nourished and anemic children who seem liable to be affected with tuberculosis. Plans are being discussed for providing an outdoor room for the use of such children.

I have given this somewhat detailed account of how this plan was accepted by the town of Canton in order to show the attitude of the townspeople toward school inspection. They showed themselves ready and eager to accept it the moment it was presented to them in a serviceable and inexpensive form. This result was largely due to their confidence in their school committee and their local board of health, both of which bodies favored the project.

Within the first year of this experiment I was consulted by the superintendent of schools in the neighboring town of Norwood and they soon after installed a school nurse. The town of Milton, on the other side of us, are now planning a similar arrangement.

It seems, then, that the people in the country districts are ready for this important step in prevention of disease, and it only needs a little encouragement on the part of influential people interested in public health to bring about the adoption of a method of school inspection which our experience shows to be effective and economical.

## THE DIFFICULTIES AND LIMITATIONS OF DIAGNOSIS IN ADVANCED CASES OF RENAL TUBERCULOSIS.*

BY HUGH CABOT, M.D., BOSTON, MASS.

To any one familiar with the progress made in the diagnosis and treatment of renal tuberculosis during the last ten years, the advancement of our knowledge must be eminently satisfactory. There is perhaps no department of genito-urinary surgery in which the application of new methods has been crowned with more success and consequent benefit to our patients. We have reached the position where it is generally possible to lay down the facts with regard to the conditions in the urinary tract before operation with an accuracy which is nearly absolute. It is, therefore, well that we should, so to speak, take account of

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stock and see in what directions our diagnosis is still faulty and to what extent our conclusions must, therefore, be based upon an insecure foundation.

By all odds the most important result of ten years of work has been the proof that renal tuberculosis is, in its earlier stages, almost invariably unilateral, and if we except the cases of the diffuse miliary type, the statement might be even more absolute. This knowledge has come as a result of the intelligent use of the cystoscope, ureter catheter, functional tests of the renal activity, bacteriological examination, guinea-pig inoculation and finally, demonstration of the facts at operation. So accurate has become our knowledge as a result of these investigations that we have come to insist upon a detailed knowledge of the condition of the sound kidney before advising operation. But even with all these methods intelligently applied, there are certain types of genito-urinary tuberculosis in which error is difficult to avoid. This is particularly true of two classes of cases.

First, cases occurring in the male with undoubted tuberculosis of the genital tract, primary in the epididymis or prostate with bladder involvement in which the determination of the conditions in the kidney is often difficult.

Second, cases occurring in the female in which the disease is primary in the Fallopian tubes, with bladder involvement, obscuring the renal condition. One might add the reported cases of primary bladder tuberculosis, though of these I have no experience. It may be held that the experienced observer employing all known methods of diagnosis will not fall into these traps, but it must, of course, be admitted that all observers are not of equal experience and that in some cases at least the pitfalls are well devised to ensnare the unwary. I will briefly note a few cases in which difficulties of this kind have resulted in error or delay of diagnosis.

Case I. An unusually vigorous, well-developed young man of twenty-two living in good hygienic conditions developed frequency of urination and pain on micturition without obvious cause. Accompanying this there was slight urethral discharge, which was for a time believed to be a gonococcus infection, though the gonococcus was never found. The surgeon under whose care he was at that time discovered the presence of an enlarged prostate and regarded the case as one of acute prostatitis. Under simple remedies the condition quieted down, though pus never entirely disappeared from the urine. A year later he had a sharp hematuria accompanied by exacerbation of symptoms. This ceased spontaneously and he was again comfortable. A year later, two years after the onset, another attack of hematuria. Careful examination at this time showed the prostate considerably enlarged and moderately tender; there was no involvement of the epididymis on either side. Cystoscopy showed considerable inflammation of the base of the bladder, not involving either ureter orifice. Ureter catheterization showed marked kidney damage on the left, a normal kidney on the right. Inoculation experiments showed tubercle bacilli from the bladder urine, from the left kidney and a few from the right kidney. Catheterization of the right ureter was again done, no tubercle bacilli found and repeated tests showed that kidney to be sound. Left nephrectomy was followed by recovery.

Case II. A man of twenty-five seen at the hospital with frequency of micturition which had existed for five years. The bladder was much contracted and the urine always contained pus in large quantities. By rectum the prostate showed no enlargement, but marked tenderness, the whole region was much infiltrated and the separate structures could not be made out. Inoculation experiments from the bladder urine showed tuberculosis. Under rest in bed and careful treatment the bladder capacity was increased to four ounces. Cystoscopy then showed a much ulcerated bladder in which the ureter orifices could be seen only with difficulty and the left only could be catheterized. The urine from this kidney showed tubercle bacilli by inoculation. Functional tests showed poor function of both kidneys and the process was therefore regarded as bilateral. A year later his condition had improved somewhat. His general health was good, he had gained weight and was better in all respects except in regard to frequency of micturition. Functional tests with indigo carmine showed practically normal function of the right kidney, very little work done by the left. Proceeding on the basis of the previous experiments it seemed probable that the left kidney, which was still the source of pain, was the most important factor in his discomfort and it was therefore removed. Upon section this kidney showed no tuberculosis, extensive hydronephrosis with comparatively little kidney substance remaining and a few small calculi in one of the sacs. The error in this case occured for two reasons. First, because the observations of the previous year were relied upon, and second, because the findings of one ureteral catheterization were too implicitly followed.

Case III. A girl of eighteen, after a severe illness thought to be typhoid, complained of pain in the region of the right kidney, accompanied by fever, tenderness and tumor. The attack quieted down without careful study, though it was discovered that there was pus in the urine. These attacks continued to occur at intervals during the next four years, at the end of which time she first came under observation. Her general condition was even then good. There was marked tenderness in the region of the right kidney and exquisite tenderness in the right lower quadrant of the abdomen, with considerable muscular spasm. Frequency of micturition was troublesome, but not excessive. The urine contained much pus. More extended examination was advised but neglected. Six months later her condition was much less satisfactory. She had lost weight and was having more or less continuous fever. The attacks of pain in the right side had continued. Cystoscopy showed considerable ulceration of the base of the bladder, most marked on the left, but without involvement of either ureteral orifice. Kidney function was good upon both sides and the urine from the kidneys was normal. Operation showed the case to be one of bilateral tubercular salpingitis. Patient did not survive.

Case IV. A woman of thirty-five, fifteen years ago had pulmonary tuberculosis for which she was sent to a sanatorium and has since lived an out-of-door life. Eight years ago had pain in the region of the left kidney. At that time cystoscopy and ureteral catheterization showed left renal tuberculosis and a sound right kidney. No bladder involvement. For reasons which do not appear, probably because of the lung process, no operation was advised. Since that time the improvement in her general condition has been marked and maintained; the lung process has

remained quiescent. Eight months ago cystoscopy and ureteral catheterization showed that the left kidney was still actively tuberculous but was secreting little urine. At this time tubercle bacilli were found in a catheter specimen from the right kidney, though the urine was in other respects normal. Bilateral tuberculosis was believed to exist and no operation advised. One month ago was first seen by me. Her condition is essentially the same as eight months ago, except that there is now marked and progressive bladder involvement. Cystoscopy is difficult. There is ulceration of the base of the bladder. Left ureteral orifice is stiff, dilated and retracted, only pus comes from that side. The right ureteral orifice is apparently normal, urine collected from that kidney apparently normal in all respects, though the results of guinea pig inoculations are still pending.

These cases show various of the difficult situations and some of the reasons for error. Case IV seems to me to show the danger of depending too much upon laboratory reports and too little upon the general appearances and probabilities. I am inclined to think that the tubercle bacilli found eight months ago were either a contamination, a faulty observation or a confusion with the smegma bacillus. That bladder contamination of the specimen collected by ureter catheter may occur is illustrated by Case I, if further proof of the assertion is demanded. I am firmly of the opinion that more stress should be laid upon the absence of inflammatory products in the urine collected from the kidney than on the discovery of a few tubercle bacilli. Where the urine is apparently normal, further evidence is required before condemning that kidney. The importance to be attached to the absence of findings of inflammation in the kidney has been ably pointed out by Chute.

### MANAGEMENT OF DIFFICULT CASES.

I now want especially to invite your attention to that class of cases in which our methods of study are handicapped and, therefore, unreliable, owing to the advanced stage of the disease and the contraction of the bladder. Our security in diagnosis depends almost completely upon the ability to catheterize both ureters. Where the bladder is contracted and irritable, holding from one and a half to three ounces, the investigation becomes difficult and at times hazardous. The ureter orifices can sometimes not be seen or, if seen, cannot be catheterized. The presence of tuberculosis can be proved by examination of the bladder urine.

The first problem to be solved is whether the case belongs to the so-called upper or lower type; in other words, whether the tuberculosis is primarily genital or urinary. Careful physical examination will sometimes throw much light upon this question, but in a certain number of cases both types exist simultaneously. I do not wish here to discuss cases belonging to the lower type, though they present numerous and interesting problems. Assuming for the sake of argument that the cases under discussion are primarily renal, what is our duty?

### THE OUTLOOK WITHOUT OPERATION.

There are few ills in the domain of medicine which have more variegated possibilities of suffering than genito-urinary tuberculosis. I need not describe to you the horrors of such an existence and I have no fear of contradiction in the assertion that unless surgery offers some relief, medicine will afford none.

### THE OUTLOOK WITH OPERATION.

If our attempts to relieve these patients by surgery are fortified at every turn by the greatest accuracy attainable under the circumstances it is scarcely possible to make them worse and I can hardly regard an operative death as a worse alternative to continued existence. Now assuming that the massive focus of infection is renal and that the involvement of the bladder, or in the male the prostate, is secondary, what has surgery to offer?

First, If one kidney is sound, the outlook may be said to be fair and considerable improvement extremely probable. We know that the lesions of the bladder and even of the prostate improve in some cases enormously, in others considerably, after the removal of the primary focus alone. We know that still further improvement of the bladder conditions may be brought about by the wise, cautious and systematic use of tuberculin. I believe that in many cases still further improvement may be obtained by the use of autogenous vaccines of the colon bacillus, which is a common successor of the tubercle bacillus in these cases.

Second, Operative and post-mortem records have shown that even in these severe and advanced cases there is large possibility that one kidney is thoroughly sound. In support of this I may cite the two following cases.

CASE I. A girl of twenty-two with a long history of bladder disturbance. When first seen she was much emaciated, with fairly constant pyrexia, great frequency of micturition and considerable pain in the region of the left kidney. Cystoscopy was extremely difficult. The left ureteral orifice was finally made out and catheterized, the urine showing much pus and many tubercle bacilli. The total kidney function was poor. It seemed eminently probable that both kidneys were involved, and no operation was advised. She lived for months in torture and died of a left-sided perinephritic abscess, with a normal and apparently competent right kidney. This case could, I believe, have been saved by operation.

CASE II. A girl of twenty with a history of increasing bladder disturbance for five years. When first seen she was in good general condition, with some pain in the region of the left kidney. The bladder was much contracted, never holding three ounces. Cystoscopy was extremely difficult. Neither ureter orifice could be seen. Indigo carmine was excreted in fair amount by the left side, apparently not at all by the right, though the observation could not be long prolonged. Under the belief that in her good general condition one kidney must be sound, the left side was explored. A large kidney apparently normal though with a much dilated ureter was found. On the strength of this the right kidney which was converted into a caseous suppurating mass was removed. At the present time, two years after operation, she is in an apparently

normal condition. The urine is free from tubercle bacilli and the bladder holds ten ounces. There is some frequency of micturition due to a polyuria which has the appearance of that due to interstitial nephritis.

These cases are of course only suggestive but the suggestion is strong.

### MORTALITY.

Much stress has been laid upon the question of mortality, and we have rightly prided ourselves upon having reduced the operative risk from one which was almost prohibitive to one which is almost negligible. The most recent cases will, I believe, show a mortality below 2%. Admirable as this reduced mortality is, our desire to achieve it must not blind us to the fact that it is not the final goal. He who allows his fear of mortality to prevent him from attempting cure in desperate cases is not fulfilling his whole duty. In these advanced cases where the outlook without operation is almost absolutely bad, mortality should be a minor consideration. Even if the death-rate should be one in three, the restoration of the other two cases to a life of comparative comfort would be a notable achievement well worth the risk. Therefore I believe that in this connection the discussion of mortality should have a minor place.

In dealing with these difficult cases our attitude should, I think, be different and we should apply standards different from those applicable in the earlier cases. If we cannot catheterize the ureters, cannot state with accuracy the comparative function of both kidneys, our boasted accuracy is gone, but we can still martial a considerable array of data to further our conclusions and furnishing at least presumptive evidence.

### DATA WHICH CAN BE OBTAINED.

First, The general condition of the patient. It is of much importance to know how a given patient has withstood the inroads of the disease. Where general condition has been well maintained, weight, strength and appetite are good, we may presume that the patient is still master of his condition. The general physical examination gives data of much importance. Absence of any demonstrable foci in the lung is evidence of good resistence. Evidence of healed lesions elsewhere, as in the bone, is of value. A careful examination of the kidney regions may enable us to guess which side is involved. Pain, though valuable, is misleading, as it may be due to the dilatation of the ureter on the sound side, which, I believe, frequently occurs in these contracted bladders. I will not pursue this topic further except to point out that the general estimate of the patient's condition is not without value.

Second, Data to be obtained from the urinary tract. Though our investigation in detail is much handicapped, we are by no means deprived of all evidence. It is important to study the twenty-four-hour amount of urine, the total solids and ability of the remaining kidney tissue whether on one or both sides to respond to the stimulation of artificial polyuria. These observations are particularly of value if it can later be demonstrated that one kidney is doing the bulk of the work and are presumptive evidence of the adequacy of that kidney.

Cystoscopy though much handicapped gives valuable evidence. In a proportion of cases, in my experience small, it can be satisfactorily carried out by ordinary methods under local anesthesia. In a larger proportion such an examination cannot be made, as the length of time required to gather facts is an unnecessary torture to the patient, and general anesthesia, or spinal anesthesia, should be resorted to. It has seemed to me that spinal anesthesia was particularly suited to this work and was less dangerous than general anesthesia. The danger in these cases from general anesthesia comes chiefly from the undesirable effect upon the kidneys, which are here always handicapped, dangerously so when we are dealing with bilateral disease. I am perhaps more impressed by this danger because several years ago I lost a patient from uremia following a simple anesthesia at which only a short cystoscopy was done. During the last year we have employed spinal anesthesia on several of these cases and it has worked to our satisfaction. Pain has been entirely obliterated, an ounce, sometimes more, has been added to bladder capacity for the time being, and anesthesia has lasted in satisfactory degree from an hour to an hour and a half. I believe it to be the anesthetic of election in the present state of our knowledge, for these conditions.

By means of the cystoscope we can get certain general information.

First, The general character of the bladder process with suggested localization on one side. We can study the work of the ureter orifices in some cases, though often only by the swirl of urine without seeing the orifice itself.

Second, The excretion of indigo carmine has seemed to me of considerable value in these cases, though I admit its limitations. It will often enable the observer to locate the position of the ureter among the bladder folds, thereby demonstrating retraction of the ureter orifice due to ureteritis and peri-ureteritis. The promptness of the excretion is of importance; the character of the jet will throw light upon the condition of the ureter, whether normal or dilated. When indigo carmine is excreted promptly and in good amount from one side, and little or not at all from the other, it is strong evidence of the soundness of the one kidney. It is as far as I know the only functional test applicable to these cases.

Third, In a considerable number of cases radiographs are of value by showing increased density of the affected kidney, and if caseation and phosphatic deposits have occurred, the complete outline of the kidney and ureter may be very clearly shown. This gives nothing more than contributory evidence, but is of value in making up the complete picture.

An examination thus conducted will enable us to group the cases into two classes.

First, Patients in good general condition secret-

ing a urine good in amount and total solids, in whom indigo carmine is excreted almost entirely from one side. The presumption in these cases is strong that one kidney is sound, the other extensively diseased and operation may be advised with a considerable chance of success.

Second, This group will contain the larger number of cases, the doubtful ones. Their general condition will be fairly good, the general kidney function fair. Indigo carmine may be excreted from both sides, neither showing much advantage over the other. These are the really hard cases and those in which error is most likely to occur.

For cases belonging to this second group I am inclined to advise exploratory operation. I am quite aware that this is adopting a method discarded and repugnant to modern methods of diagnosis. On the other hand, there is a point at which these methods fail us, and yet we are not justified in refusing to give a patient the benefit of any doubt that exists. If exploration is allowed to take the place in any degree of careful systematic study, then it is a reversion to discarded methods and not to be advised, but when other methods fail it may become the method of election. There are certain cases with marked involvement of the bladder in which by no other method at our disposal can it be asserted with absolute certainty that there is kidney involvement. On the other hand, if the bladder process is secondary to that in the kidney, and if one kidney is sound, the sick kidney should be dealt with. It is less dangerous to explore efficiently than to leave a patient with one bad and one good kidney. It is less dangerous to explore and get the facts than it is to guess at which kidney is involved and run the risk of removing the worse of two seriously damaged organs.

### METHOD OF EXPLORATION.

In planning an exploration, certain facts must be recognized at the outset. To cut down upon one side and trust to the examination of the other side with the hand passed across the peritoneal cavity is to run a grave risk of error. It is not safe to trust to the examination of the surface of the kidney even if well exposed to reveal the extent and character of the process, and it is nothing short of flying in the face of providence to trust to an exploration at arm's length and in a cramped position. Any exploration to be efficient must be bilateral and must involve a knowledge not only of the kidney and upper portion of the ureter as felt by palpation, but some knowledge of the urine excreted by that kidney. These propositions have been laid down by as good authorities as Israël, Caspar and Rovsing, though comparatively little has been written bearing upon this particular question. Most writers who mention it advise a bilateral lumbar incision. It has seemed to me that the anterior muscle-splitting incision was more satisfactory. It gives ready access to the kidney and the upper half of the ureter. It is quickly made and quickly closed, giving a strong and remarkably painless wound. Particular stress must be laid on always exploring both kidneys. Israël has pointed out the importance of opening the ureter on both sides and collecting the urine directly from both kidneys. To this Caspar has added the value of injecting indigo carmine and observing the secretion. The apparent condition of the kidney and the ureter is an unsafe guide. In a considerable number of the cases the ureter on the sound side is dilated, though it is rarely, I believe, thickened in a way to deceive those familiar with tubercular ureteritis and peri-ureteritis. A kidney completely converted into a caseous mass may feel surprisingly normal. With the catheters in both ureters, from which urine should be allowed to drain for ten or fifteen minutes, much knowledge may be gained. This coupled with information gained by examination and palpation should enable the expert to arrive at an opinion. Nephrotomy done for exploratory purposes seems to me objectionable. It will fail to show the exact condition of the kidney unless a very free incision is made. Large incisions carry notable risk of secondary hemorrhage and result in wound contamination which may be serious. That nephrotomy as a palliative operation for drainage may occasionally be justifiable I am prepared to admit. The examination of the kidneys being completed, the wounds may be closed if both kidneys are diseased or normal, or one wound may be closed and nephrectomy done upon the diseased side.

In light of recent experience with spinal anesthesia in cases of damaged kidneys, I am inclined to regard this as the anesthesia of election, at least for the exploratory part of the operation. Anesthesia extending well up to the costal margin is readily obtained and is entirely satisfactory for the exposure and opening of the ureters. The urine can then be collected and conclusions drawn without subjecting the patient to the strain of general anesthesia. Should nephrectomy be decided upon, it may either be done at once under a general anesthetic, or postponed to a future occasion. We have not found spinal anesthesia satisfactory for nephrectomy and do not advise its use, but for the preliminary determination of of the kidney function, I believe it will lower the mortality in properly selected cases.

Obviously these methods are not to be recommended to the inexpert or to the occasional operator, and he will probably do well to avoid what must always be an unprofitable field from a point of view of permanent cure. On the other hand, when done by those with experience and sound judgment, I feel sure it will save much discomfort and many lives at a cost not high considering the outlook without operation.

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THE Milwaukee County Medical Society appointed a committee at a special meeting, April 16, "to investigate the attitude of the Christian Science church toward the practice of medicine with especial reference to the treatment of contagious diseases." It was reported that there were, on that day, fifty-three cases of scarlet fever in one ward of the city being treated by Eddyist healers.—*Jour. Am. Med. Asso.*

# AN ANALYSIS OF FORTY-SIX CASES OF PROSTATECTOMY.

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## Abstracts of Case.

### SUPRAPUBIC PROSTATECTOMY FOR BENIGN ENLARGEMENT.

(Concluded from No. 17, p. 612.)

Case 38. W. G. S., No. 171169. E. S. Age, seventy-five years. Married. Clerk. Entered hospital Aug. 2, 1910. Service of Dr. Brooks.

*History.* — Gonorrhea when a young man. Two years ago had retention of urine, relieved by one catheterization. Five months later, again, retention. Since then has had increasing difficulty and straining at micturition. Retention about every five weeks during past year requiring one or more catheterizations. Urine becoming increasingly foul. For last three weeks has required catheterization twice a day; for two weeks has been on constant drainage. Comes in with retained catheter.

*Examination.* — Spare, well-preserved old man, somewhat deaf. Pupils equal and react to light. Heart sounds irregular but strong. Pulse 100. Râles at bases of lungs. Abdomen negative. Right inguinal hernia. Urine very foul, contains much pus. Rectal examination: Generally enlarged, non-tender prostate of normal consistency. Constant drainage.

*Urine* very foul, acid, 1010, albumen large trace, sugar 0. Sediment, much blood and pus.

*Cystoscopy* not attempted on account of impossibility of clearing bladder.

*Operation*, Aug. 8, suprapubic cystotomy. Bladder cavity very small. In the median line, about one inch from internal urethral orifice, rounded opening of a diverticulum was seen which would admit forefinger. Cavity of diverticulum quite extensive, explored with sound, contained 3–4 oz. of thick offensive pus. Tube inserted into diverticulum. Bladder wall closed about tube. Patient drowsy and mildly uremic. Drainage for three weeks without material improvement.

*Operation*, Aug. 31, laparotomy, cystotomy, suprapubic prostatectomy. Peritoneal cavity opened by free incision from pubes to umbilicus, intestines walled off with gauze. Diverticulum explored, found to extend to the left of median line behind and around the ureter. Peritoneum dissected off posterior wall of bladder and left lateral wall of pelvis. Attempt to remove diverticulum or invaginate it abandoned on account of difficulty of freeing adhesions. Peritoneal cavity closed. Prostate, which projected moderately into cavity of bladder in form of a collar, enucleated. Considerable bleeding. Gauze packed into cavity from which prostate came. Drain placed outside of bladder to base of diverticulum. Rubber tube to bladder.

*Pathological report.* — Glandular hypertrophy.

*Convalescence.* — Sept. 3, wicks out of bladder. Good recovery, wound closed slowly. Oct. 2, passing some urine through urethra. Oct. 15, wound closed, passing urine naturally, urine much cleaner. No residual. Bladder washes quite clear. Discharged forty-fifth day after second operation.

*Subsequent history.* — Jan. 12, 1911, patient returned for examination. General condition excellent, considerable spasticity of legs, walks with cane. Passes urine naturally and without straining, perfect control. Holds water two hours or more during day, urinates three or four times at night. Urine pale, slightly turbid, with shreds, no odor. Soft rubber catheter passes easily, residual ¼ oz. nearly clear urine. Wound healed solidly. Diverticulum apparently drains itself.

Case 39. S. S., No. 171252. E. S. Age, sixty-three years. Married. Farmer. Entered the hospital Aug. 6, 1910. Service of Dr. Brooks.

*History.* — Gonorrhea twenty-five years ago. Eight years ago began to have difficult urination. Three years ago had retention, since then has used catheter once or twice a day. Passes urine every hour at night and about every two hours during day.

*Examination.* — Heart and lungs negative. Left inguinal hernia. By rectum prostate considerably enlarged, not tender. Patient catheterized himself, getting 11 oz. of residual urine.

*Urine* acid, 1008, albumen trace, sediment — pus and blood.

*Cystoscopy.* — A large, white, rounded mass to the right side of and above urethral orifice, either a stone or an encrusted prostatic lobe. Cystoscopy indicates advisability of suprapubic operation.

*Operation*, Aug. 13, suprapubic prostatectomy. Soft round stone lying free in bladder removed. Prostate projected markedly into bladder cavity. Enucleated. Very little bleeding.

*Pathological report.* — Glandular hypertrophy with inflammation.

*Convalescence.* — Slow but uneventful. Normal urination not established until Sept. 14. Good control. Discharged Sept. 17, thirty-fifth day. Passing urine naturally. Residual, ¾ oz. No. 29 sound passes easily.

*Subsequent history.* — Letter Jan. 23, 1911. Feeling fine, wound healed, urine clear. Passes urine once to three times at night. No leakage. Gets tired easily.

Case 41. S. G., No. 171502. S. S. Age, fifty-five years. Married. Peddler. Entered hospital Aug. 20, 1910. Service of Dr. Porter.

*History.* — Denies venereal. General health excellent. About three months ago, while attempting to urinate, was seized with severe pain and passed blood for two days. After this had incontinence at night, frequency and straining by day. On July 6 entered the hospital, the diagnosis of hypertrophied prostate was made and operation advised. Patient refused. Returned Aug. 20 with constant dribbling and considerable pain.

*Examination.* — Robust, healthy man. Chest negative. Bladder distended half way to umbilicus. By rectum prostate symmetrically enlarged. Residual, 10 oz.

*Urine* cloudy, acid, albumen 0, sediment — few leucocytes and blood corpuscles.

*Cystoscopy*, July 6. Bladder markedly trabeculated, moderate intravesical enlargement of lateral lobes with median bar, contour smooth, no evidence of malignancy. Aug. 24, condition about same.

*Operation*, Aug. 25, 1910, ether, suprapubic prostatectomy. Gland enucleated through a median incision in floor of bladder. Bladder wall remarkably thick and unyielding. Very little bleeding. Tube drainage.

*Pathological report.* — Glandular hypertrophy.

*Convalescence.* — Uneventful at first. Sept. 16, patient passing urine, suprapubic wound nearly closed. Sept. 19, suprapubic wound reopened and all urine came through it. It was impossible to pass catheter into bladder. Under ether suprapubic wound reopened and bladder explored. There was no sign of an outlet bladder, floor of bladder healed smoothly across. Sound passed by urethra is arrested very close to bladder cavity, pushed through by force, opening dilated, and large catheter tied in. Patient draining well. Oct. 6, patient discharged against medical advice on account of refractory conduct. Suprapubic wound still open. Subsequent history not known.

Case 46. H. L. M., No. 173998. E. S. Age,

seventy-seven years. Married. Retired. Entered hospital Jan. 16, 1911. Service of Dr. Harrington.

*History.* — No serious sickness. Eight years ago had retention of urine. Has used catheter ever since. Epididymitis once two years ago. For the last four weeks has been in bed most of the time on account of pain in the bladder and rectum when up and about.

*Examination.* — Emaciated, senile, moderate arteriosclerosis. Chest negative except for a few râles in back. Heart sounds normal, pulse intermittent. Rectal examination — prostate moderately enlarged, smooth and of normal consistence.

*Urine.* — Acid, 1024, albumen slight trace. Sediment — pus, round cells, rare cast. Twenty-four-hour amount, 28 oz.

*Cystoscopy.* — Moderate intravesical enlargement of lateral lobes. Large stone lying free on floor of bladder. X-ray shows shadow of stone of estimated diameter of 1¼ inches.

*Operation*, Jan. 19, 1911, spinal anesthesia. Suprapubic cystotomy. Removal of large stone. Small prostate enucleated in two portions, very little bleeding. Tube drainage and gauze pack.

*Pathological report.* — Glandular hypertrophy.

*Convalescence.* — Considerable shock. Pulse very feeble, energetic stimulation, salt infusion, etc. Considerable difficulty in swallowing for first few days. Sitting up on fourth day. Jan. 26, tube removed, considerable sloughing of wound. Jan. 28, catheter drainage, wound granulating. General condition excellent. Feb. 7, catheter removed, passing water for first time in eight years. Feb. 22, discharged, thirty-fourth day. Wound closed, urination natural, residual adout 3 oz.

*Subsequent history.* — April 1, 1911, general condition excellent, no urinary symptoms. Residual, 1 oz.

SUPRAPUBIC PROSTATECTOMY FOR MALIGNANT DISEASE.

CASE 2. J. S., No. 149840. W. S. Age, sixty-three years. Married. Contractor. Entered hospital Oct. 10, 1906. Service of Dr. Richardson.

*History.* — For two months, difficult and frequent micturition. Has had retention on a few occasions requiring catheterization. Urinates about every half hour by day and four times at night. Considerable pain.

*Examination.* — Well developed and nourished man in good condition. Prostate large, firm and hard.

*Cystoscopy* under ether. No signs of malignancy. Left lobe projects more than right.

*Operation*, Oct. 20, suprapubic prostatectomy. Prostate very adherent removed en masse with great difficulty; the specimen included the whole prostate and both seminal vesicles. Some bleeding. Tube drainage and gauze wick.

*Pathological report.* — Malignant adenoma involving vesicles.

*Convalescence* uneventful. Discharged Nov. 22, thirty-third day. All urine passed by urethra, wound nearly closed.

*Subsequent history.* — Died about four months later of cancer.

CASE 3. T. McG., No. 152899. W. S. Age, sixty years. Married. Entered hospital May 13, 1907. Service of Dr. Mixter.

*History.* — Gonorrhea thirty years ago. Operation at Massachusetts General Hospital sixteen years ago for stricture of urethra and piles. No symptoms since operation until present trouble. Two months ago began to have frequency and pain with difficulty in starting stream. Frequency ten times a day. For last two weeks complete retention, requiring catheterization. Has lost 15–20 lb. in weight during last three months.

*Examination.* — Poorly nourished. Arteriosclerosis. Coated tongue. By rectum prostate small and hard, not nodular. No. 24 sound passed easily to bladder, no stone.

*Urine* acid, 1020, albumen 0.

*Operation*, May 16, partial suprapubic prostatectomy. Prostate forms collar about internal urethral orifice. Portion of prostate shelled out with difficulty. Fibrous ridge behind meatus burned through with cautery. Suprapubic tube.

*Pathological report* missing. Verbal report — carcinoma.

*Convalescence* uneventful. June 6, patient voids without difficulty. June 11, residual 6 oz. Patient voided lying down, not considered a fair test.

*Subsequent history.* — June 23, 1908, returns for examination. General health fair except for weakness. Not able to work. Passes urine in a fair sized stream, but it takes him some time to get started. Nocturia, two or three times. Rectal examination reveals no mass or induration in the region of the prostate. Residual not measured.

Letter, Jan. 19, 1911, from his physician: "His health is certainly as good as it was before he was troubled with his prostate. He has at times some difficulty in passing his urine, but has no retention. Outside of some frequency, his bladder condition is good."

CASE 7. J. D., No. 154867. W. S. Age, seventy-one years. Widower. Farmer. Entered hospital Sept. 17, 1907. Service of Dr. Balch.

*History.* — Gonorrhea in youth, also one year ago. Frequency of micturition for four years. Urinates from every half to two hours by day, every half hour by night. Difficult to start stream, sometimes dribbles.

*Examination.* — Obese. By rectum prostate symmetrically enlarged, not tender. Catheter introduced with difficulty. Residual, ½ oz.

*Urine* pale, turbid, with shreds, albumen slight trace. Sediment — epithelium and mucus, gonococci found.

*Cystoscopy.* — No note.

*Operation*, Sept. 21, partial suprapubic prostatectomy. Prostate small and hard, no third lobe, but a fibrous bar behind internal meatus. Unable to shell out prostate with fingers. Bar cut through with actual cautery. Small portion of prostate removed with scissors for examination. Suprapubic drainage. Some bleeding.

*Pathological report.* — Malignant adenoma.

*Convalescence* uneventful. Oct. 19, suprapubic wound closed, micturition easy. Discharged twenty-eighth day to Convalescent Home.

*Subsequent history.* — Nov. 1, 1908, returned for examination. General condition good since leaving hospital. Frequency two or three times at night. No sign of recurrence. Catheter shows very little residual. Nov. 17, 1908, Out-Patient Department note: Frequency and pain at night, stream small, urine cloudy, residual 4 oz. May 24, 1909, prostate enlarged and hard as a rock by rectum. Residual urine, 11 oz. Taught to use a Coudé catheter.

Dec. 6, 1910, general condition good, using catheter. Bladder irrigation, no pain. Gaining weight.

PERINEAL PROSTATECTOMY FOR MALIGNANT DISEASE.

CASE 13. A. C., No. 160096. E. S. Age, sixty-two years. Married. Fisherman. Entered hospital Sept. 4, 1908. Service of Dr. Brooks.

*History.* — Denies venereal. Difficulty in passing urine for last six months. For last two weeks has had

complete retention requiring catheterization. Has lost much weight in last four weeks.

*Examination.* — Small, wiry, old man. By rectum prostate small, hard and nodular, considered probably malignant.

*Urine.* — Amount varied from 40–160 oz. daily. Specific gravity 1009, albumen trace. Slight amount of pus.

*Cystoscopy* unsatisfactory.

*Operation*, Sept. 10, 1908, partial perineal prostatectomy. Gland dense and fibrous removed piecemeal. Anterior lobe removed.

*Pathological report.* — Malignant adenoma.

*Convalescence.* — Perineal fistula persistent. Healed to a pinpoint but urine leaked through it constantly without control. Kept on urethral drainage for weeks, but fistula could not be made to close.

Nov. 9, attempt made under ether to repair fistula; it was dissected out to neck of bladder and closed with sutures, urethral drainage. When catheter was removed, urine passed through penile urethra, but without control. Perineal sinus soon broke out again. Discharged Dec. 12, 1908, ninety-second day, with incontinence and persistent perineal sinus.

*Subsequent history.* — Patient seen a few months later had recovered partial control, but perineal sinus still persisted.

Town clerk reports that patient died Sept. 11, 1909, of genito-urinary cancer.

Case 18. J. H. K., No. 163166. W. S. Age, sixty-eight years. Widower. Farmer. Entered hospital March 31, 1909. Service of Dr. Mixter.

*History.* — Gonorrhea forty years ago. No urinary trouble until two days ago, when he suddenly had retention of urine. Local physician unable to pass catheter.

*Examination.* — Large, powerfully built man. Inguinal hernia. Under ether an English catheter was passed and tied in. This did not drain properly and he was later tapped above the pubes. Perineal section for drainage of the bladder was later done.

*Cystoscopy.* — Through perineal wound, prostate, intravesically enlarged, appeared irregular in outline. Felt nodular by rectum. Considered malignant.

*Operation*, April 29, partial perineal prostatectomy. Lateral lobes dug out with difficulty.

*Pathological report.* — Cancer.

*Convalescence.* — Usual post-operative treatment. May 4, passed some urine by urethra, has control. Edema of feet, râles in lungs. May 25, discharged, twenty-sixth day. Walking about, gaining strength. More than half urine comes through urethra, good control.

*Subsequent history.* — Letter, June 2, 1910, from sister of patient states that patient died May 27, 1910. "Gained a little after leaving hospital, began to fail in October, suffered during winter and was confined to his bed from Easter until death in May."

Case 25. M. K., No. 166026. E. S. Age, eighty-one years. Married. Farmer. Entered hospital Sept. 22, 1909. Service of Dr. Brooks.

*History.* — Gonorrhea twenty-five years ago. For one year has had frequency with small amount passed at a time, ten or twelve times by day, three or four at night. No bleeding. For last two weeks frequency and pain have been increasing. Yesterday had retention requiring catheterization.

*Examination.* — Well-nourished old man. Arteriosclerosis. Bladder distended. Soft catheter easily passed and 20 oz. clear urine withdrawn. By rectum prostate hard and smooth. Considered malignant.

*Operation*, Sept. 27, 1909, perineal prostatectomy. Tissue very adherent. Usual drainage.

*Pathological report.* — Cancer.

*Convalescence.* — Control on Oct. 4. Patient up and about, and feels well. Discharged Oct. 15, eighteenth day, to local doctor. Complete control, but all urine passes through perineal wound. Wound slowly closing.

*Subsequent history.* — Letter: Daughter writes that patient died July 30, 1910. Was quite comfortable for two months after leaving hospital. Very sick in February, 1910, and after that had ups and downs until the end.

Case 27 T. D., No. 166901. E. S. Age, seventy years. Married. Laborer. Entered hospital Nov. 13, 1909. Service of Dr. Harrington.

*History.* — For past six months has had frequency and burning. For four weeks had dribbled urine constantly.

*Examination.* — Fairly well-nourished old man. Marked arteriosclerosis. Bladder distended above umbilicus. Scrotum and legs edematous. Rectal examination unsatisfactory on account of pain. Reflexes normal. Soft catheter passed, 25 oz. clear urine withdrawn.

*Urine* pale, clear, acid, 1006, albumen trace, sediment — little pus. Twenty oz. withdrawn every three hours.

*Cystoscopy.* — Prostate projects moderately into bladder cavity. Contour irregular. Suggestive of malignancy, this is confirmed by rectal touch. Prostate very hard and nodular, projects markedly into rectum. Constant drainage removed, patient unable to void.

*Operation*, Nov. 29, 1909, perineal prostatectomy. Prostate adherent to rectum, rectum opened. Prostatic lobes dug out with scissors. Rent in rectal wall closed with two layers chromicized catgut sutures. Seepage.

*Pathological report.* — Cancer.

*Convalescence.* — Packing removed on second day. Put on constant urethral drainage. Dec. 5, fecal matter in dressings. Urine and feces discharge through wound. Kept on constant drainage. Patient irrational.

Dec. 29, spinal anesthesia, suprapubic cystotomy for drainage. Rectal fistula repaired and closed with sutures. Unsuccessful.

Jan. 17, spinal anesthesia, second attempt to close rectal fistula. Sphincter cut through, edges freshened and sutured. Patient collapsed after operation. Fistula reopened in three days. Wound packed widely open. Urine and feces discharged through this opening with very little control.

Feb. 13, discharged, seventy-fourth day, to Chronic Home.

*Subsequent history.* — Patient made great improvement in general health and strength and left the Home in a month. Wound had contracted down very considerably. He had control of bowels. Letter of Dec. 14, 1910, states that patient is up and about and able to do little chores. All urine comes through the wound, passes it about every hour, has complete control day and night. His bowels are not very regular, otherwise do not trouble him. Has a good deal of pain in leg and chest. Back is bent over very much.

Case 33. J. O. B., No. 169013. W. S. Age, fifty-six years. Married. Brick yard. Entered hospital March 25, 1910. Service of Dr. Mixter.

*History.* — Cataract operation for both eyes. For two years has had increasing frequency and burning, every half hour by day, ten or fifteen times at night. Two weeks ago unable to void and since then has been catheterized by his physician.

*Examination.* — Poorly nourished, prematurely senile man. Speech slurring. Atrophy of left side of tongue. Chest examination not remarkable. Bladder distended to umbilicus. Knee-jerks absent. By rectum prostate

enlarged, hard and nodular. Temperature elevated. Put on constant drainage. Patient unable to void.

*Urine* pale, alkaline, 1004, albumen slight trace.

*Cystoscopy.* — Markedly trabeculated bladder with posterior trigonal pouch. Moderate intravesical enlargement of prostate. Two lateral lobes and two small median lobules.

Neurological consultation. Reflexes normal, not tabes.

*Operation*, April 6, spinal anesthesia, perineal prostatectomy. Usual technic. Prostate very adherent.

*Pathological report.* — Cancer.

*Convalescence* uneventful. April 16, patient voided through penile urethra for first time. General condition not improving. Wound slowly closing. Discharged April 23, seventeenth day, to local doctor.

*Subsequent history.* — Letter Jan. 11, 1911, from patient's physician: "As far as the operation for the prostate was concerned, result was good. He suffers at present no inconvenience with his bladder and passes his urine with ease. The wound is closed and there is no leakage whatever; the control of bladder is good."

CASE 36. R. M., No. 170370. E. S. Age, seventy-three years. Married. Leather dresser. Entered hospital June 15, 1910. Service of Dr. Brooks.

*History.* — Gonorrhea at sixteen. Has lost one half his weight in last five months. Last winter gave up work on account of frequent micturition. Urinates every ten minutes. Three weeks ago retention of urine. Catheterization causes bleeding.

*Examination.* — Emaciated, cachectic, old man. Dry skin, tongue dirty brownish coat, marked arteriosclerosis. Constant dribbling of urine. Prostate hard and nodular, characteristic of cancer. Residual, 20 oz. Put on constant drainage.

*Urine* bloody.

*Operation*, June 21, perineal prostatectomy. Tissue dense and adherent, removed with scissors, median bridge removed. Two small stones removed from bladder with forceps. Double tube and gauze pack.

*Pathological report.* — Adenocarcinoma.

*Convalescence.* — Uneventful. July 8, has gained some control; for first time urine passes through wound. July 27, urine still comes through wound, but with complete control. Sound No. 29 passed to bladder with ease. Residual, 2 oz. Wound slowly closing in. Patient anxious to go home. Discharged thirty-sixth day.

*Subsequent history.* — Died one month after reaching home, of pneumonia. Urinary symptoms relieved.

PERINEAL PROSTATECTOMY FOR TUBERCULOSIS.

CASE 26. J. M., No. 166711. E. S. Age, sixty years. Married. Farmer. Entered hospital Nov. 1, 1909. Service of Dr. Harrington.

*History.* — Denies venereal. Well up to three years ago, when he began to have frequent and painful urination with occasional blood. Has been treated in Out-Patient Department for one year. Many cystoscopic examinations. Patient comes in with retention. Put on constant drainage.

*Examination.* — Poorly nourished, cachectic. By rectum prostate irregular and stony hard. Considered malignant.

*Urine* acid, 1014, albumen trace, sediment — blood and pus.

*Operation*, Nov. 5, perineal prostatectomy. Two lobes removed without much difficulty, finger introduced into bladder, which is small. No median lobe. Double tube drainage and gauze pack.

*Pathological report.* — Tuberculosis.

*Convalescence.* — Tubes and packing out early. No bleeding. Temperature elevated every evening. Nov. 16, put on constant drainage to facilitate closure of sinus. Sinus very slow to close. No control of urine when catheter is removed. Put on perineal drainage. Discharged Jan. 8, 1910, with perineal drainage and rubber bottle.

*Subsequent history.* — Letter states patient died March 6, 1910.

## Clinical Department.

### FIVE SUCCESSIVE CÆSAREAN SECTIONS ON THE SAME WOMAN, THE FIFTH ON TWINS. A UNIQUE OBSTETRIC HISTORY.

BY CHARLES M. GREEN, M.D., BOSTON.

(From the Clinic of the Boston Lying-In Hospital.)

I.

S. H., negress, sixteen years of age, four feet seven inches in height, entered the Boston Lying-In Hospital Feb. 4, 1898, having been in primiparous labor twenty-two hours. The os uteri was fully dilated, the membranes unruptured, the unengaged head presented O. L. A., and the fœtal heart rate was 138. Pelvimetry disclosed a generally contracted, flat, rachitic pelvis, with a true conjugate at the brim of 6.5 cm. The case was seen by the late Dr. George Haven, who in the face of an absolute indication performed Cæsarean section, In accordance with the fixed policy of the hospital the woman was not sterilized. The uterine incision was closed with two layers of silk sutures, and the abdomen with mass sutures of silkworm gut.

The woman ran an irregular temperature of 100°–102°, and on Feb. 27 the abdominal wound broke down. There were no vomiting, distention, or other peritoneal symptoms. The wound was opened and drained, and gradually closed by granulation. On April 3, a small breast abscess was opened. After protracted convalescence the mother was discharged well on May 3; the baby, which weighed 5 lbs. at birth, was also discharged well, weighing 8 lbs. 13 oz. The woman was advised to enter for a timely section in the event of subsequent pregnancy.

II.

On March 16, 1901, S. H. re-entered the hospital, having been in labor nine hours. The os was dilated one inch, the membranes were unruptured, the head presented, O. L. A., and the fœtal heart rate was 138. After the usual preparation of the patient, Cæsarean section was performed by Dr. Green. Incision was made in the old scar and the uterus opened through adhesions without entering the peritoneal cavity. It was not easy to differentiate the tissues in the uterine and abdominal walls; but the incision was closed with two layers of silk suture, with superficial sutures of silkworm gut.

The woman made a rapid and normal convalescence, and was discharged well April 16. The baby, weighing 7.5 lbs., was also discharged well. The mother was advised to enter the hospital before the advent of labor, should she again become pregnant.

III.

In accordance with advice, S. H. entered, apparently at full term, but not in labor, on Aug. 6, 1903, and received the usual preparation for laparotomy. For the third time the head presented, O. L. A., and the fœtal heart rate was 132. Labor pains began on Aug. 7, and section was performed by Dr. Newell, who was then on duty. The uterus was opened as before through

scar tissue and adhesions without entering the peritoneum; and the incision was closed with one layer of silk sutures, and one layer of silkworm gut.

The convalescence was uneventful, and mother and baby were discharged well on Sept. 14, the baby weighing 7 lbs. 14 oz.

IV.

On Oct. 17, 1906, S. H. entered the hospital for the fourth time, apparently at term. She was not in labor, and no vaginal examination was made. Palpation disclosed a breech presentation, S. D. A.; the fœtal heart rate was 142. After the usual preparation of the woman, section was performed by Dr. Green. The uterus was opened and closed as before, except that linen sutures were used instead of silk.

After an uneventful convalescence the mother was discharged well on Nov. 13, with her baby weighing 5 lbs. 9 oz.

V.

S. H. entered for the fifth time on Feb. 10, 1909. She was apparently at term, was not in labor, and was not examined vaginally. Palpation showed twin pregnancy, — one baby presenting the head, O. L. A., with heart rate 140, the other presenting the breech, S. D. P., with pulse of 164. After two days of preparation the woman was delivered by Cæsarean section by Dr. Green. The breech baby was delivered first, and weighed 5 lbs. 9 oz.; the baby presenting the head weighed 5 lbs. 4 oz.; and the placenta weighed 1 lb. 15 oz. The total weight of twins and placenta was, therefore, 12 lbs. 12 oz. The placenta was single, with one chorion and two amniotic sacs with complete median septum. The babies were both males. The incision was closed with two layers of linen sutures and one of silkworm gut. The woman was discharged well in three weeks, after a normal convalescence. The larger baby had gained 3 oz. over its birth-weight; but the smaller baby had not nourished as well, and was 8 oz. below its birth-weight.

It was a matter of interest at the time, that the fifth Cæsarean operation on this negress was performed on the birthday anniversary of the great President who emancipated her race in this country; and the mother announced her intention of naming her twins Abraham and Lincoln respectively.

The performance of Cæsarean section for the fifth time on the same woman is no longer a unique event, either in this country or in Europe. Indeed, since the case above reported, the writer has himself successfully performed another fifth section in the same clinic. But as far as I am aware no case has ever been reported in which six babies have been delivered by five sections on the same woman.

As was intimated in the early part of this report, it is the policy of the Boston Lying-In Hospital, in the Cæsarean operation, never to remove or impair the function of healthy organs for the purpose of preventing subsequent pregnancy. The attitude of the hospital on this subject does not seem to have met with general professional approval. Apparently an opinion is held by a majority of obstetric surgeons that it is unfair to a woman to subject her for a second time to the risk of the Cæsarean operation. It is not my purpose to discuss this subject at this time; those interested in the question are referred to papers and discussions in the Transactions of the American Gynæcological Society for 1909 [1]; but it may be noted that under the policy of non-sterilization the two women who have each submitted to five sections have left the hospital with eleven healthy infants, and they themselves in excellent health.

There is another interesting feature in the case of the negress, S. H., whose utero-abdominal incision sloughed in her first convalescence. The result of this surgical misadventure was a firm, broad, high fixation of the uterus to the anterior abdominal wall, so that in four subsequent sections the peritoneal cavity was not entered, and convalescence progressed without untoward incident. Moreover, the abnormal position of the uterus, with the fundus reaching nearly to the umbilicus, produced no unpleasant symptoms. It therefore seemed to me legitimate to try the effect of producing a sufficiently long and broad artificial utero-abdominal fixation with a view to subsequent extraperitoneal section. I have, therefore, done this operation in two cases of young primiparæ, each with an absolute indication, after performing their first Cæsarean section. Both of these women were discharged in good condition with their infants, and I await a second section with interest. If my technique proves successful, these two women should be delivered by extraperitoneal incision repeated any number of times with a negligible risk.

## A SUMMER SERVICE IN THE WELD WARD OF THE MASSACHUSETTS GENERAL HOSPITAL.

BY CHARLES J. WHITE, M.D.,
*Instructor in Dermatology in Harvard University.*

This ward of twenty beds, built by private generosity, was opened in October, 1903, and has proved of great benefit to many patients who otherwise would have found great difficulty in caring for their peculiar, and often crippling, diseases. Secondly, this ward has been of great service to the community in isolating many highly contagious cases of syphilis until their open wounds have cicatrized and thus rendered them less dangerous to their neighbors. Thirdly, this ward has been of great value to its staff and to medical students, who have found within its beds practically all the common diseases in their severest forms, and most of the rarest dermatoses. These beds have been the means of keeping within the hospital these many patients whose diseases could, therefore, be observed and studied until convalescence or death completed the cycle of their disease.

The service last summer, extending from July 1 to Oct. 1, was a typical one in most respects and was marked by the appearance of many interesting dermatoses, so that it seems worth while, since in our case this has never been done before, to publish the record of the more common diseases and to describe in a few words the rarer ones.

[1] The writer's paper may also be found in the American Journal of Obstetrics, vol. lix, no. 6, 1909.

CASE 1. *Syphilis.* Man aged twenty-three, laborer. Two years ago chancre developed on prepuce. To-day both legs and thighs show numerous large ulcers, some of which have coalesced to form denuded areas covering large portions of the limb. Over the rest of the body are many scars, some keloidal, some pigmented, which vary in size from that of a ten-cent piece to larger areas occupying nearly the whole forearm and elbows. From the active lesions a foul-smelling pus was exuded.

Apart from the extensive destruction present in this patient his case is interesting because of the long time necessary to reproduce a whole and sound integument. Despite the use of the most varied hygienic, antisyphilitic, dermatological and surgical remedies, the man was in the ward off and on for nine months. This would have been a splendid case for "606," but unfortunately none was obtainable.

CASE 2. *Syphilis.* Woman aged twenty-three, housework.

A case somewhat similar to the last. Several ulcers were present, the largest of which dated back three years and was on the lower leg, measuring 5½ by 4½ by 3½ inches. The woman was also pregnant and at the time of her discharge three and one-half months after entrance fetal movements were noticeable and the patient had gained 23 lbs. Nevertheless, mother and child died later at a state hospital.

CASE 3. *Psoriasis.* Woman aged forty-seven, housewife.

Eruption generalized over scalp, face and body. Disease began thirteen years ago, disappeared six years later during an attack of toxemia and reappeared six months afterward while under the influence of the grippe. The patient showed a marked idiosyncrasy toward salicylic acid, developing delirium and great weakness after the application over the whole surface of an ointment containing this drug.

CASE 4. *Granuloma Annulare.* Female aged eight. Father has tuberculosis, only case in family. Scarlet fever two years ago, whooping cough last winter. Physical examination negative except for cutaneous eruption, which first appeared six weeks ago. To-day there is on the flexor surface of the left index finger, a painless oval ring 1½ inches in diameter. The ring is elevated ¼ inch above the surface, is white, firm and elastic, and somewhat nodular. The center is probably at the level of the normal skin, and is free from abnormal signs except for a somewhat purplish color. Over the middle joint of the right index finger on the extensor surface is a circular line of papules, rather ill-defined, red in color, ¾ inch in diameter, the arrangement producing a ring-shaped eruption resembling its fellow on the left finger. The rings continued to extend peripherally, the larger one gaining ¼ inch in diameter, and some of the individual papules became delled and glistening. This advance continued for about six weeks and then x-ray exposures were begun, and at the end of a week distinct softening of the lesions had begun, although the periphery had continued to extend. Three weeks after the institution of the rays the lesions were level with the normal skin, but the extent of the previous process could be seen clearly by the color differences of the healthy and the abnormal skin.

HISTOLOGY. (BIOPSY.)

*Epidermis.* — The stratum germinativum is normal, but the overlying rete cells change abruptly. The protoplasm of the cell shrinks, leaving the nucleus occupying the larger portion of the cell structure; or the protoplasm around the nucleus disappears, leaving conspicuous perinuclear halos; or again, the nuclear protoplasm rarefies, leaving a clear space containing chromatin granules floating within the nuclear rim. The stratum granulosum is hyperplastic and dense. The cell boundaries are very indistinct and the layer as a whole seems compressed. Above this layer is an indeterminate zone, basic in its affinity and difficult to name. It is very compact and contains many elongated flattened nuclei without granules. This zone occupies the area of the stratum lucidum, but can hardly be designated by this name. Above this debatable ground appears a very hyperplastic stratum corneum which is almost twice as thick as the whole underlying epidermis. It is wholly atypical and consists of swollen horny cells full of vesicular spaces, most of which seem to hold a degenerated nucleus containing granular matter.

*Corium.* — The subpapillary layer is rather rarefied and holds numerous vessels, many of which are slightly dilated and surrounded by lymphocytes. On the other hand, some of these vessels show endothelial thickening. Below this level the corium becomes highly pathological and contains many lobules contiguous to one another and separated by more or less vertical or slanting bands of fibrous tissue. The lobules themselves are composed of short, dense connective tissue cells containing many lymphocytes. Within these lobules are large veins exhibiting considerable endothelial and perithelial thickening, and here and there total obliteration. Sweat glands, when present, seem compressed, and their lumen is much restricted in diameter. These structures seem to be analogous to the cellular invasions of the fat cells observed in erythema induratum, and in places in these sections this invasion and final obliteration of the panniculus adiposus can be well observed. No giant cells, however, can be noted.

The elastic element in the corium is very much reduced in amount everywhere. It is deficient in amount in the papillary and subpapillary zones, while in the neoplastic lobules elastin is represented solely by a few somewhat large and peculiarly straight rods.

CASE 5. *Syphilis.* Male aged forty-nine, machinist. Probably initial lesion three to four years ago. To-day has two exceedingly deep ulcers near scapula and near spinal column, accompanied by "rheumatic" pains. In three weeks the ulcers were entirely healed under iodide of potash and mercurial inunctions.

CASE 11. *Lupus Erythematosus?* Female aged thirty-seven, housework.

Has had chills once or twice weekly for four months up to two weeks before admittance to the hospital. Has not felt well or strong for four or five years. Several years ago had glands removed from the neck.

In February, 1910, patient thinks she froze her ears and nose. Two weeks later the present disease began in dry and grayish scales on the convalescent areas. In May pigmentation of the face appeared after sitting in the sun, and her family physician told her she had erysipelas.

On entrance one found dark red to brownish, or even purple, elevated areas covering the entire face and forehead and ears, and here and there one noted closely adherent, dirty, gray scales. Edema was present below each eye. The back of the hands and the arms presented red, dry, scaling, slightly elevated patches, pea to coin-sized. The fingers itched. Von Pirquet reaction negative, as was our examination of the nasal discharge for lepra bacilli.

The case was a diagnostic puzzle and to-day (Dec. 16, 1910) the woman lies in the ward again as a re-entrant. We may have here a paralyzed vascular network following the severe exposure of the affected parts to the winter's cold.

CASE 16. *Scrofuloderma.* Female aged fifteen, school.

Three years ago pain and stiffness and loss of strength developed in the child's wrist two weeks after vaccination. Hand and forearm were put up in plaster and when the dressing was removed two to three months later a discharging ulcer made its appearance and lasted for a year. Shortly after, other ulcers developed and have persisted ever since. On entrance, both forearms and wrists were undeveloped and the skin showed many foul, sluggish, deep ulcers with interspersed scars, and the right elbow and wrist were anchylosed at an angle of 45°. A radiograph indicated an accompanying osseous change. Physical examination was negative, Von Pirquet positive. No temperature.

These ulcers yielded slowly to Scharlach R dressing, but thorough curettage was performed later and great masses of necrotic tissue, extending down to the tendon sheaths were scooped out.

Case 19. *Herpes zoster.* Male aged sixty-two.

Right scapula, thoracic, axillary and brachial regions affected. Severe neuralgic pain, especially at night, which yielded very satisfactorily to freezing with ethyl chloride over the seats of origin in the spinal cord.

Case 20. *Syphilis.* Female aged twenty-four, jeweller.

Date of infection unknown. Present condition consisted of numerous ulcers of five months' duration on both lower legs. On right leg there were twelve, and on left two, and they ranged in size up to that of a silver half-dollar. A small brown cicatrix was found in left pubic region and a mucous plaque was present on the left side of the tongue. During the woman's visit three teeth were removed because of necrosis of left lower jaw. Patient was discouraged and hysterical. Thirty-three days after entrance all active lesions were healed.

Case 23. *Pemphigus foliaceus.* Female aged seventy-three.

For the last year has had frequent dizziness and headache and swelling of face. The cutaneous eruption developed about six months ago as yellowish "spots" on tongue, lips and buccal mucous membrane. These "spots" soon became blisters, and these blisters gave way to large exfoliated flakes. The disease then manifested itself on the chin in the form of blisters accompanied by a burning sensation.

On entrance the chin was free from eruption, but the oral cavity was still affected. The tongue was completely denuded and bore deep cracks. Scattered over the arms, axillæ, groins, trunk, buttocks, legs and feet were numbers of ruptured blebs with ragged epithelial coverings, or with completely denuded surface, or with sanguinolent moist crust. The patient was very weak, emaciated and poorly nourished and complained of intermittent itching.

During the remainder of her life a few new bullæ appeared, always flaccid, never tense. The great heat was very depressing to the patient, her appetite was never good; nausea developed and disappeared; delirium was present. Later a great change took place. Old lesions had healed and but few new ones had developed, and the prognosis looked favorable. Five weeks after entrance, however, flaccid bullæ appeared, delirium returned, the appetite failed and the final decline commenced, death occurring fifty-nine days after entrance, nine or ten months after the original outbreak. No autopsy was permitted.

Case 32. *Prurigo.* Female aged thirteen, school.

This young girl had been in our ward on three or four previous occasions. A few days of hospital life, with its healthy conditions of air, food, sleep and medical care, had always brought about a rapid amelioration of her skin lesions and she was always discharged practically free from visible signs of disease after a few weeks' sojourn in the ward. Despite her apparent cure, the child would always return to the out-patient clinic a week or more later with the disease as evident as ever. This had been our previous experience, and we were destined to see the cycle repeated once again.

On entrance the eruption was a perfect replica of previous attacks. The cheeks and forehead were very flushed and studded thickly with firm, hard, shotty papules. The arms and legs were similarly affected, but the lower legs and the lower arms were much more abundantly broken out and the extensor surfaces of both arms and legs were more affected than the flexors. Palpable glands were numerous and widely scattered.

This was a typical example of prurigo mitis, and hospital hygiene, soothing washes, carbohydrate diet and intestinal antiseptics brought about their usual rapid favorable results, and nineteen days after entrance the girl was discharged nearly free from outward manifestations of her disease. To-day, Feb. 20, the disease has apparently wholly disappeared.

Case 34. *Trophic ulcer.* Female aged thirty-six, dressmaker.

This patient had a long surgical and dermatological history and had been in the hospital numerous times. Her adolescence was interrupted by numerous illnesses, including measles, scarlatina, diphtheria, mumps, multiple cervical abscesses, etc. On top of this history was the story of the death of five brothers and sisters in childhood, three of which were due to phthisis. The long, persistent affection of the foot dated back twenty-four years. It began like chilblains (lupus pernio?), followed by atrophy and ulceration and total destruction of toes, until all had fallen off progressively from the big toe outward. The present trouble consisted of an ulcer on the dorsum of the foot, accompanied by great pain, but controllable by hot water. The ulcer responded well to treatment and was nearly healed in sixteen days.

Case 36. *Dermatitis herpetiformis.* Female aged five.

For the last four summers the patient has had a similar outbreak, but never so extensively as at present. Four months before entrance the child had scarlatina, and one month later the present outbreak began. The general physical examination revealed no abnormalities apart from the skin lesions, which consisted of small and large herpetiform vesicles scattered over the entire body and extremities. Many lesions had coalesced and crusted, and between them appeared numerous pigmented macules, the remains of previous outbreaks. The blood showed 13% of eosinophiles; indican was usually deficient in amount. Two weeks after entrance the production of new vesicles had ceased, and the patient's skin was free from active lesions. This, however, was merely a quiescent period of the disease, perhaps induced by Fowler's solution (M. v, t. i. d.) and by the external application of 50% ichthyol. During the rest of the child's stay in the ward (five weeks) there were always a few grouped vesico-bullæ present, usually on the wrists and dorsum of feet.

Case 43. *Xeroderma pigmentosum.* Female, Irish, aged eleven, school.

Brothers and sisters living and well. This is the first example of this rare disease observed in this hospital in only one member of the family, and also the first case outside of the Russian Jews. At the age of three months in the month of February this child was taken out of doors for the first time. The following day the mother noticed a considerable erythema of the face followed at once by freckling which had persisted, receding every winter and reappearing more

intensely every summer. At seven years of age the eyes became "sore" and were examined and glasses were prescribed. One year ago a growth developed on the right eye which has persisted and the visiting ophthalmologist records: "Pseudo-pterygium of right eye, scars on the left cornea, and chronic conjunctivitis and blepharitis of both eyes." The present dermatosis was limited to the entire face, ears, neck, hands and forearms, most markedly on the face, where there were many pinhead to small pea-sized, reddish-brown to chocolate-brown macules associated with a few punctiform or linear telangiectases. The interlying skin was atrophic, thin and wrinkled, and in places desquamating. On the left ala of the nose there were several keratoses; while on the right cheek a well-developed but small epithelioma was present. The child as a whole was undersized and the face looked pinched and old. The child was kept in a darkened room by day and spent the evenings and nights out of doors. The keratoses and epithelioma were curetted and excised, and after a sojourn of six weeks in the ward the child, much improved in appearance, was transferred to the Eye and Ear Infirmary.

HISTOLOGY.

The epidermis is very abnormal for the most part. In its most typical areas the layer as a whole is thin and the boundary between corium and palisade layer is indefinite and difficult to define — a precancerous state. Above this malformed basal layer there are only a few strata of spinous cells, and these cells, even, are abnormal; some have large perinuclear halos, others are entirely wanting. Above these atypical layers the granular cells are absent and, surmounting all, we find parakeratosis.

*Corium.* — As a whole this portion of the skin can best be described as fragmentary. Below the most diseased areas there are collections of lymphocytes seeming to connect with the broken epidermic line by a pedicle and spreading out below into a rounded mass of lymphocytes. In places the sebaceous glands seem irregular in their make-up. Vessels are not conspicuous and elastin resembles connective tissue in its disjointed look.

EPITHELIOMA ON XERODERMA PIGMENTOSUM.

The epidermis of the non-ulcerated portion is very hyperplastic. The rete consists of many layers of cells, and as one approaches the epitheliomatous area the boundry between epidermis and corium becomes ill-defined, and epithelial down-shoots appear. In the ulcerating epitheliomatous area, cellular confusion is conspicuous. Here one sees all manner of degeneration — cavitary and ballooning especially. Scattered through this area are whorls and irregular masses of epithelial cells mixed up with great outpouring of inflammatory cells. These epithelial masses show cells of great size with central rarefaction. Widely dilated sweat glands occupy a conspicuous place in the picture, appearing very high up in the sections. In addition, there are many dilated capillaries and hypertrophied veins. The corium as a whole is markedly disrupted by cellular invasions, principally lymphocytic. As one would infer from the foregoing description, elastin is conspicuous by its absence. On the whole, the histological picture is a remarkable one.

CASE 46. *Scrofuloderma.* Male aged eleven.

Multiple crusting ulcers in a negro boy about eyes, jaw, neck and clavicles. Dullness in left lung; ankylosis of left elbow; evening temperature of 99.

CASE 47. *Dysidrosis.* Female aged eleven, school. Bullæ of both feet, especially of plantar surfaces, and, to a lesser extent, of all fingers on their lateral surfaces. There was in addition a marked hyperidrosis present. These active lesions dated back only two weeks, but the patient had suffered much for the past six or seven years from itching of the feet.

CASE 50. *Purpura.* Female aged three.

Family history negative. The extensive hemorrhages into the skin of face, scalp, tongue, chest, arms and shoulders developed suddenly four days previously without discernible cause and without other objective physical symptoms.

CASE 51. *Dermatitis exfoliativa.* Male aged twenty-four, clerk.

A sore developed on the penis about March 1, became phagedenic but was healed in about six weeks. One week later a faint roseola appeared and the man began to take internally some capsules and to rub in externally "mercurettes." This was done for more than six weeks. In June a week of malaise, sore throat, etc. In late July noticed vesicles on lateral aspects of fingers, and one week later "water blisters" between scapulæ and on face. On Aug. 26 the patient entered the hospital in a state of universal desquamation. The scales were large, thick, loose at periphery and attached at the center. There was considerable moisture about the face and there were remains of bullæ about the ankles. Itching was a marked feature and the skin as a whole was of a dusky red hue. The general physical condition was good, insomnia and pruritus being the only marked pathological features. Twelve days later the mental condition became clouded and the man was restless and irritable, but in another week the skin began to be less moist and to desquamate less and the patient became more normal mentally. So it went with ups and downs until the middle of October, when the skin was nearly normal in color and quite dry, and the desquamated scales were much smaller in size than at any previous time. A few days later, however, the sacral skin became moist and erythematous, then the same conditions developed on the legs and finally the whole body surface became moist, dusky red and rather denuded of scales. Improvement again followed but the patient became tired of his surroundings and left the hospital on Nov. 1. A few days later, after no care whatever, because the nurses of a private hospital were afraid to go near this unfortunate man, I found him in a most deplorable condition. The odor from his body was almost insupportable, the whole surface was moist, dusky red, covered with large thick scales attached at their center, and his bed was literally full of desquamated scales. The man was ordered home, where he has been seen every two weeks, and now (February, 1911), the man has gained considerable weight, and with the exception of his face and lower legs the skin is practically normal. The hair has grown again everywhere, except in the anterior portion of the scalp, but the nails are still replaced by elevated conical keratinous masses. This great change for the better can be attributed partly to more favorable surroundings, home cooking and companionship, but principally to the suppression of all external treatment save the application of borated talcum powder. This idea was derived from Dr. Engman and Dr. Mook, of St. Louis, who had found recently in three cases of dermatitis exfoliativa that no treatment at all, or restriction to inert powders, had been followed by cures.

It is a fact worthy of record in this connection that the writer has now under his care three other cases of dermatitis exfoliativa who have all done remarkably well under this desiccating treatment, the explanation of this striking amelioration apparently lying in prevention of bacterial growth, heat and moisture being absent.

Case 52. *Dermatitis medicamentosa.* Male aged sixty-five, merchant.

About eleven days before the outbreak of the skin the man had been given iodalbin, of which he had taken perhaps a half dozen capsules with the idea of helping his arteriosclerosis. (Iodalbin is said to contain 21½% of iodine.) The first symptom noticed was a hemorrhage into the right eye. Two days later a small papule appeared on the left ala of the nose. Other lesions soon developed on cheeks, neck, ear, chin, eyebrows, scalp and back of hands. These lesions were unusual looking. They were whitish, flat-topped, firm, elevated nodules. The top looked macerated as though pus were underneath. On puncture no pus was found, however, but the upper layers of the skin were separated from the highly exuberant underlying papillæ. This was the initial lesion, and each one spread slowly, coalesced with its neighbor and broke down into a firm crateriform sloughing ulcer with rolled up, dirty-white edges. Cultures from unbroken nodules revealed only the ordinary pus germs. General physical examination revealed chronic interstitial nephritis in a greatly debilitated man. The urine contained albumen, but no trace of iodine. Despite energetic treatment, the ulcers continued to spread, necrotize and coalesce until finally practically the whole of the face and back of the left hand became a foul, sloughing, bloody ulcer with greatly elevated, rolled-up, dirty-white surrounding walls. The notable feature of the process was its constant extension without multiplication, but with the strictest adherence of the peripheral walls to the striking clinical characteristics of the original papulo-nodular lesions. Every day found the man weaker and more septic and lesions larger until a few days before death, when the necrosis ceased and healthy granulations appeared. This cutaneous change for the better came too late, however, for the septic absorption had been too severe for a man as badly diseased internally, and death ensued thirty-three days after the appearance of the original papule. At autopsy there were found: (1) Stones in the pelvis and calyces of the right kidney. (2) Pyonephrosis of right kidney. (3) Chronic nephritis and hyperplasia of right kidney. (4) Agenesis of the left kidney. (5) Obliterated left kidney. (6) Arteriosclerosis. (7) Fibrous and verrucous endocarditis of the mitral valve. (8) Slight fibrous endocarditis of the aortic valve. (9) Defective closure of the foramen ovale. (10) Chronic adhesive myocarditis. (11) Hypertrophy and dilatation of the heart. (12) Emphysema and edema of the lungs. (13) Chronic pleuritis, left side. (14) Hydrothorax, left. (15) Ulcer of the stomach. (16) Erosions in the mucosa of cecum. (17) Slight chylous ascites. (18) Cholelithiasis. (19) Streptococcus septicemia. Such a report explains why this man should have been susceptible to an irritant like iodine.

Case 58. *Granuloma fungoides.* Female aged forty-six.

Disease began as a pruritic eczema seven years previously and was treated as an eczema by various physicians until a dermatologist began to be suspicious of a developing granuloma fungoides. Soon after, this doctor's fears were realized, for the chronic red infiltrations of the right popliteal and right mammary regions became more infiltrated and raised above the skin. On entrance to the ward there were numerous, typical, dusky-red, superficially rough and scaly infiltrations scattered over the body. The left foot and left labium were swollen and glands were palpable in the left inguinal and right mammary and axillary regions. Bandaging gave some relief to the edema. A few days later the abdomen began to swell and this condition increased rapidly from day to day. Bullæ now developed on the left leg and thigh, which were now reaching large dimensions and becoming brawny. Flatulency developed and ingestion of food was disagreeable because of the growing abdominal tumor. The left lower extremity and inguinal region were now threatening to break down. Throughout these twenty-three days vigorous x-ray treatment was carried out to the extreme limit and the individual lesions responded well to the influence of the rays. On the twenty-fourth day, after a consultation with Drs. Porter, Harrington, Richardson and Codman, Dr. Porter opened the abdomen and found a large cyst of the left broad ligament containing brownish, turbid fluid. The recovery from ether was good, but lack of appetite and of sleep retarded convalescence. Restlessness and abdominal pain supervened and the following day the patient suddenly died.

The autopsy (Dr. Oscar Richardson) revealed:

A mass in the left inguinal region which shows the operation wound 5 cm. long. This is open and exposes broken down, dirty, grayish, new growth-like tissue. The section of the axillary masses shows tissue similar to that in the groins.

Peritoneal cavity contains a slight excess of reddish cloudy fluid. The serosa of contiguous coils of the small intestine is coated with a slight amount of reddish, granular fibrinous material.

The pelvic cavity contains a large mass of tissue which extends over the brim posteriorly, infiltrating all through the tissues. On section this tissue is grayish-white, encephaloid in character and is continuous with the masses in the inguinal region. This mass infiltrates also the psoas and the muscles of the anterior and abdominal wall.

In the region of the mesenteric and retroperitoneal glands there are smaller and larger masses resembling the tissue already described.

*Diagnosis.* — Pyonephrosis, left. Thrombus in left exterior iliac vein. Edema lower extremity. Slight fibrinous peritonitis. Obsolete tuberculosis of a bronchial gland. Septicemia, streptococcus.

HISTOPATHOLOGY.

*Skin.* — The sections examined were ulcerated to a large extent. The epidermis of the unbroken skin was greatly flattened by the tremendous underlying cellular invasion and the interpapillary downgrowths were sparse, slim or absent. The rete was reduced to a few layers of sickly cells, the granular stratum was for the most part absent and the horny layer was unimportant. The corium was almost entirely occupied by dense, though somewhat scattered, homogeneous masses of mononuclear cells, whose nuclei were unusually large and whose extra-nuclear protoplasm was almost invisible. The supporting reticular membrane was difficult to discern, owing to the density of the infiltrating cells. Curiously enough, one could note a few scattered fibers of elastin, delicate and long and straight in the thickest cellular masses, short and thick in the sparser areas. In the ulcerated portions of the sections the lymphocytic masses extended quite to the free border of the skin.

*New-growth-like mass from the peritoneal cavity.* — The histology of this tissue was similar in all respects to that of the corium of the skin — a dense, almost solid mass of lymphocytes supported by an almost invisible fibrous reticulum.

Case 60. *Lupus vulgaris.* Female aged ten, school.

An unusual type of perhaps fifteen nummular areas on buttocks, thighs, hands and feet. These areas were dull red, free from nodules, very superficial and had recurred several times after various forms of treatment.

She entered the ward for the purpose of allowing the lesions to be excised.

Case 62. *Ichthyosis hystrix.* Male aged twelve, school.

This boy was born blind, deaf and dumb and at the age of one and one-half years developed a strange anomaly of the skin. At entrance, the face, neck, ears, nose, lips, genitals, legs and feet showed lines and plaques of papillary prolongations covered with brown-black integument. The whole skin was dry and harsh to the touch. The terminal phalanges of fingers and toes were enlarged, some were inflamed, and many were without nails. The hair was very sparse and dry and short. (This condition of the hair and nails is suggestive of the congenital and family cases reported by Nicolle and Halipré and by the present writer.[1]

Case 64. *Syphilis.* Male aged twenty-two, student.

Chancre five months previous to entrance followed in four weeks by roseola of two weeks' duration. Later, two months of sore throat and then present rupioid ulcers which dated back one month. These ulcers varied from dime to dollar size, exuded pus and appeared on legs and arms.

Case 69. *Pellagra.* Female aged fifty-two, housework.

This white woman was born in Marblehead, Mass., and had had ten children, of whom six are still living and well. Ten years ago she had bronchitis and has suffered with recurrent attacks ever since. As a young woman she experienced three years of facial neuralgia. The menopause appeared ten years ago, and for the last eight weeks there has been much flatulence and diarrhea. The cutaneous eruption developed on the extensor surface of the forearms as a "pimply rash," which itched severely but soon dried and became scaly. Four weeks ago the skin of the back of both forearms and hands and around the whole wrist was affected. This eruption consisted of vesicles and bullæ on an erythematous base, with suggestion of hemorrhage on the fingers, and the upper brachial margins were absolutely sharp. The tongue was red and swollen and fissured, and the mucous membrane of the lower lip was edematous and covered with brownish crusts along the vermilion border. The labia, vagina and anus presented similar appearances. A biopsy was refused.

The patient was poorly nourished and cachexia was quite pronounced and there had been a loss of weight of twenty pounds during the last five months. There were only seven teeth remaining and these were badly decayed. Pyorrhea alveolaris was present. The knee-jerks were exaggerated. The woman was very weak and listless and her memory was very poor. Anorexia was marked. There were signs of severe bronchitis in the lungs. Before the woman left the ward Dr. Griffin, of Columbia, S. C., examined her and agreed with our diagnosis. Two weeks after leaving the ward the patient died.

In addition to the foregoing patients, there were interesting examples of the following diseases which were severe enough to require hospital care: Dermatitis venenata, 14 cases; eczema, 12 cases; syphilis, 5 cases; varicose ulcers, 4 cases; epithelioma, 3 cases; sycosis vulgaris, psoriasis and scabies, 2 cases each; and lupus erythematosus, herpes zoster, lupus vulgaris, purpura, furunculosis, pityriasis rosea and callositas, 1 case each.

[1] Jour. Cutan. Dis., June 1896.

## Medical Progress.

### PROGRESS IN HYGIENE AND STATE MEDICINE.

BY WM. C. HANSON, M.D., AND H. LINENTHAL, M.D., BOSTON.

#### DISINFECTION BY FUMIGATION WITH DRY RESORCIN.

The mode of disinfection which Chalmet[1] describes is practical, inexpensive and claimed to be highly effective as demonstrated by bacteriological tests. The process is as follows: A little resorcin powder is placed on a plate and gently heated by an alcohol lamp; the resorcin vaporizes quickly. For an ordinary room two to three grams of resorcin are sufficient. The room can be aired out after an hour.

Not only does this method disinfect the room, but it is claimed that it acts as a prophylactic, preventing the development of contagious diseases in those who have been exposed to infection. The author advocates the frequent fumigation of the sickroom by this method during the course of the illness. It may also be used for the fumigation of schoolrooms and schoolchildren, since the vapors of resorcin can be inhaled without injury and in many cases with benefit to the respiratory tract.

#### THE VALUE OF DISINFECTION.

From recent bacteriological study Hogarth[2] concludes that persons become infected mainly by direct contact, and that infective material must be comparatively fresh to cause disease. The crucial problem, then, is not in the infectivity of objects, but of patients who continue to harbor active disease-producing germs long after convalescence. To be efficient, the ordinary measures of disinfection require careful revision.

#### THE VALUE OF TERMINAL DISINFECTION.

In a very convincing and stimulating paper Chapin[3] questions the value of terminal disinfection, particularly in such diseases as diphtheria and scarlet fever. The theory of infection by fomites has never had any basis in observation or experiment. It is now well known that the ordinary pathogenic bacteria are not saprophytes and that they begin to lose their virulence and die almost as soon as they leave the body of the host. The danger, therefore, that virulent organisms exist in the patient's room is extremely small and insignificant when compared with the danger of conveying organisms by the nose and throat from the healthy members of the family.

The abandoning of terminal disinfection of scarlet fever and diphtheria in Providence did not in any way increase the number of recurrences of these diseases in the families where one member was ill with either disease.

Terminal disinfection is a costly process, its need is supported neither by theoretical considerations nor by practical results. Furthermore, it withdraws attention from the importance of contact infection and the necessity of personal

cleanliness. The employment of trained nurses by local boards of health to assist in the care of the sick and to instruct by precept and example in methods of personal cleanliness and the management of contagious diseases would be less costly and more effective than terminal disinfection.

### BACTERIOLOGICAL INVESTIGATION OF THE MEMBERS OF THE FAMILY IN DIPHTHERIA CASES.

Nishino [4] examined cultures from the throats of 665 individuals, members of the families of 127 cases of diphtheria. In 41 of these, that is, 6.2%, cultures were positive. Thirty-one of the bacilli carriers were women and 10 were men. Most frequently the carriers were either mothers or sisters, that is, persons who were in close contact with children. The length of time the bacilli persisted in the throats of the carriers varied from two to twenty-five days and was not influenced by local treatment or by antitoxin.

The author concludes that from an epidemiological standpoint the bacilli carriers are of far greater importance than the patient ill with diphtheria, for while the latter is confined in bed, the former move about and come in contact with other people, especially with children. So long as these dangerous carriers are permitted to be about, the disinfection of premises cannot play an important rôle in the prophylaxis of the disease.

### THE SPREAD OF SCARLET FEVER AND DIPHTHERIA IN SCHOOLS.

Chapin [5] gives an account of his results of tabulation and study of cases of scarlet fever and diphtheria for a period of five years. His observations show that the autumnal increase of these diseases is absolutely independent of school attendance. Outbreaks of scarlet fever and diphtheria due to contact in school is the exception rather than the rule. Neighborhood contact outside of school is the more important factor. To guard against the small amount of infection that takes place in school, it is necessary to diminish the chances of exchange of saliva between the schoolchildren. The common drinking cup and roller towel must be done away with and personal cleanliness must be taught by the teacher by precept and example.

### TYPHOID CARRIERS AND THE PROPHYLAXIS OF TYPHOID IN THE ARMY.

Lemoine [6] emphasizes the need of bacteriological study of convalescent cases of typhoid and of cases suffering from gastric and hepatic troubles. For three years he has made blood cultures from all the cases in his clinic suffering from gastric and hepatic disturbances. In 40% of these he succeeded in isolating the Ebert bacillus. The bacteriological laboratory is thus a powerful weapon in the fight against the spread of the disease. But as this is unfortunately not always practical, an educational campaign must be carried on against this disease. The child must be trained to recognize the danger of having the hands soiled by fecal matter. He should be taught to clean his hands after any possible contact till this becomes an automatic act.

### THE ROLE OF CARRIERS IN THE ETIOLOGY OF TYPHOID FEVER.

Lemoine [7] states that the recent attention that has been given to typhoid carriers should not divert attention from the other modes of the spread of typhoid fever. Carriers are, of course, a source of danger, particularly in communities where there is not a proper disposal of sewage. Distinction must be made, however, among the various classes of carriers, those that are ill with the disease, convalescing cases, persons who have been cured, unrecognized cases and finally carriers of typhoid bacilli who never had the disease.

The question of typhoid carriers is but one side of the general question of germ carriers in all infectious diseases. Recent bacteriological research has demonstrated that a number of pathogenic micro-organisms may exist in the natural cavities of the healthy man without being a source of danger either to the carrier or to his environment. Of far greater importance than the healthy carriers are those unrecognized cases of typhoid often mistaken for cases suffering from gastric or hepatic disturbances.

### CHRONIC CARRIERS OF TYPHOID AND PARATYPHOID BACILLI.

Sacquépée [8] is of the opinion that there is no longer any doubt that chronic carriers play an important rôle in the obscure outbreaks of typhoid fever, whether epidemic or endemic. Many authors have variously estimated the number of cases that may be traced to that source, a fair estimate being from 8 to 12% of all the typhoid cases that occur.

The author analyzes all the outbreaks reported in literature which have been traced to typhoid carriers. He concludes that the most frequent mode of the spread of typhoid from carriers is by contamination of milk or other articles of food by the carriers. Less frequently the disease is transmitted by direct contact or by some intermediary agents. It has not yet been demonstrated whether carriers may contaminate drinking water.

In the prophylaxis of typhoid the carriers (since they cause from 8 to 12% of the cases) have to be counted with. The ideal way would be to bring about a bacteriological cure in all cases of typhoid, that is, to have the patient under surveillance till he ceases to discharge typhoid bacilli. Such a method, however, cannot be attained. Many agents and intestinal antiseptics have been used without marked success, more particularly since the typhoid germs lodge in the biliary tract. In some quarters the removal of the gall bladder has been advocated, but in several cases where this operation was done the bacilli that were excreted diminished in number but did not disappear entirely.

It is, of course, impracticable to isolate chronic

carriers, since they may continue to excrete the germs for many years.

The destruction of the germs after they leave the body of the carrier by disinfecting the excreta is the only practicable measure in the prevention of the spread of typhoid by carriers. But even this measure is not always attainable, as it is not an easy matter to get persons to carry it out properly and for a sufficiently long time.

The public must protect itself by strictly guarding its food supply. All persons engaged in the handling of food products, particularly milk, should be under strict permanent supervision.

### THE SPREAD OF CONTAGIOUS DISEASES BY FRUIT.

Sartory and Fillassier [9] examined samples of raisins, strawberries and currants taken from fruit stores where they were exposed for sale. Thirty grams of the fruit were washed in thirty grams of sterile water and bacterial counts were made by means of Petri plates. The number of bacteria found per cubic centimeter in the wash water varied from 1,800,000 to 58,000, according to the cleanliness of the fruit stand, the cleanliness and freedom from dust of the street and to the degree of exposure of the fruit to the street dust.

Second and third washing diminished the bacterial counts to 8,000 and 3,000 per cubic centimeter.

A great variety of bacilli and cocci were isolated, among them being the staphylococus pyogenes aureus and the streptococcus.

The author concludes that the manner of exposing for sale fruit which is to be eaten raw should be regulated so as to protect it from the street dust. The householder should wash the fruit thoroughly in several washings before it is eaten.

### COMMITTEE REPORT ON TYPHOID.

Following a consideration of the situation relative to typhoid fever, a committee of the Massachusetts Association of Boards of Health [10] makes the following recommendations:

1. All cases of typhoid fever must be promptly reported.
2. The State Board of Health should provide for the bacteriological examinations of blood, urine and feces for the presence of typhoid bacilli.
3. A trained agent of the board of health should visit each case for the purpose of seeing that the case is properly isolated and the stools and urine effectively disinfected.
4. The source of infection of every case of typhoid fever should be investigated by the local board of health and a copy of the report should be sent to the State Board of Health.
5. Every house in which there is a case of typhoid fever should be placarded.
6. All cases of typhoid fever should be isolated.
7. All cases of typhoid fever should be given hexamethylene-tetramine throughout the disease and for two weeks after the temperature becomes normal.
8. Patients who in their occupation are likely to infect food should not be released till four successive negative cultures have been obtained from their stools and urine.
9. Bacilli carriers should not be allowed to engage in occupations which necessitate the handling of food.
10. All bacilli carriers should be under the closest supervision of the local board of health.
11. Boards of health having cognizance of a case of typhoid fever on a dairy farm should notify the boards of health of communities to which the milk from that farm is shipped.
12. Privy vaults should not be permitted where there is a public sewer. Where privy vaults are necessary, the board of health should cause them to be properly constructed.
13. Boards of health should institute active measures for fly suppression.

### AN EXPERIMENTAL INVESTIGATION WITH GUINEA PIGS ON THE INFLUENCE OF ALCOHOL ON TUBERCULOSIS.

Kern [11] tried to determine experimentally the effect of alcohol in tuberculous infection in guinea pigs. Several series of experiments were undertaken as follows:

A number of guinea pigs were given daily from 1 to 2 ccm. of 15% alcohol, according to the weight of the animal, for a number of months. An equal number of control animals as nearly alike in weight, age and general condition were kept under exactly the same conditions, but no alcohol was administered to them. Both series of animals were then infected with equal doses of tubercle bacilli into the peritoneum and were kept till they succumbed to the disease. It was found that the animals which had been given alcohol invariably died before those which did not have alcohol. Many other interesting features were brought out in this investigation. The number of animals that succumbed to lobar pneumonia during the course of the investigation was far greater among the alcohol-fed animals than among the control animals. Likewise the young animals born from alcoholic parents gave a higher mortality and showed less resistance to infection than the young ones born from the non-alcoholic parents. The author's conclusions are:

Alcohol, even in moderate doses, diminishes the resistance of the animal organism to infection and hastens the fatal termination in tubercular infection.

Alcohol has a deteriorating effect on the progeny; it shortens the duration of life and unfavorably influences the course of a tubercular infection.

### A REVIEW OF THE PROGRESS MADE IN THE FIGHT AGAINST INDUSTRIAL LEAD POISONING.

Boulin [12] states that it is extremely difficult, if not impossible, to get an accurate number of the cases of lead poisoning that occur in any industry. For lead poisoning is, strictly speaking, not a professional disease, but is a cause of general lowering of the resistance and degeneration of the various body tissues. The slow and gradual accumulation of lead in the tissues and the slow

excretion of the poison produces a degenerative process in the kidneys, blood vessels and nervous system, and renders the individual susceptible to other maladies where the primary causative agent is not recognized.

The principal modes that have been used successfully in England and other countries for the suppression of lead poisoning have been the following:

1. The substitution of other substances for lead in industries where this is possible.
2. Improvement in the hygienic conditions under which the processes are carried on.
3. Systematic medical examination of the workers.
4. Compulsory reporting of cases of lead poisoning.
5. The enforcing of specific regulations in all lead industries.

All these causes have greatly diminished the number of cases that occur in the industries. In some occupations lead has been eliminated; in others, wet processes have been substituted for dry, and dust removal appliances and exhaust have been installed to remove dust and dangerous vapors.

The medical supervision of the workers discloses early cases and eliminates those that are unsuited for the work. Women and young persons are excluded from those processes which are regarded dangerous. The compulsory reporting of cases helps to call attention to sanitary conditions of factories wherein an unduly high number of cases are reported. The regulations insist on certain protective measures for the workers.

### FACTORY INSPECTION AND THE PUBLIC HEALTH. EXCLUSION OF CHILDREN FROM DANGEROUS OCCUPATIONS.

The medical inspection of the factories in Massachusetts aims at the better protection of the health of the community. The state inspectors of health in factory communities acquaint themselves with the hygiene of the town or city, especially in the workmen's quarters, and are constantly investigating tuberculosis and other diseases dangerous to the public health. Within the factory, the inspectors, knowing that tuberculosis of the lungs is a common consequence of overcrowding and exposure to vitiated air and dust, pay special attention to ventilation. In such work the position of the health inspectors is unique, for with their medical knowledge, which is indispensable to the proper enforcement of the statutes, they may appeal to the medical profession on the one hand and to the laity on the other, teaching all that the promotion of public health is a matter which concerns not only the medical profession, but every profession and every person.

Since the health district legislation was enacted in July, 1907, the state inspectors of health, while improving the sanitary conditions in the factories, have made inquiries concerning the health of 78,000 minors under eighteen years of age, and examined physically some 3,500. The children forced to work in a factory are entitled to as great if not greater care than those in the public schools, since many of the factory children are exposed to influences which are far more inimical to health than the conditions to which school children are subjected in schools, and for longer daily periods. One year ago Massachusetts had no law by which children in factories could be protected against poisonous and irritating dusts or against other conditions which might give rise to ill health. To-day, as the result of inquiries made by the State Board of Health, largely through the efforts and observations of the State Inspectors of Health, there is a law which is of inestimable value, permitting as it does work of a dangerous nature by children only on condition that due care is taken by both employer and children to make the occupation a reasonably safe one. The law is so elastic as to be applicable not only to the entire establishment, but to any one department in an establishment, or even to a single child. It involves not those occupations which are dangerous to life or limb, but trades, processes of manufacture, occupations or methods which are deemed by the State Board of Health to be sufficiently injurious to the health of minors as to justify their exclusion therefrom. In its enforcement an educational value is recognized by the State Board of Health and the children are kept at work so far as possible without endangering their health. The law reads as follows:

"The State Board of Health may from time to time upon the written application of any citizen of the Commonwealth, or upon its own initiative, after such investigation as it considers necessary, determine whether or not any particular trade, process of manufacture or occupation, or any particular method of carrying on such trade, process of manufacture or occupation, is sufficiently injurious to the health of minors under eighteen years of age employed therein to justify their exclusion therefrom, and every decision so rendered shall be conclusive evidence of the facts involved therein, except so far as the same may later be revoked or modified by a subsequent decision of the board. Whoever, after being notified that the State Board of Health has determined that a particular trade, process of manufacture, occupation or method is injurious as above stated, employs therein a minor under eighteen years of age shall be punished by a fine of not more than two hundred dollars and not less than fifty dollars for each offense, unless prior to the time of such employment such determination shall have been revoked or modified so as not to include the employment complained of."

In accordance with the terms of this act the State Board of Health declared the processes named in the following schedule to be injurious to the health of children within the meaning of the law, provided that the law "shall not apply to any factory wherein such special measures are adopted as appear to the state inspector of health to be reasonably practicable and meet the necessities of the case":

I. PROCESS INVOLVING EXPOSURE TO POISONOUS DUSTS OR SUBSTANCES.

1. Process in the manufacture of white, red, orange or yellow lead.
2. Processes in the manufacture of lead pipe, solder and plumbers' supplies.
3. Cutting metal articles with a mixture of lead and tin, or lead alone.
4. Processes involving exposure to lead and the dust of plumbago in electrotyping.
5. Processes involving the handling of white lead or lead monoxide (litharge) in rubber factories.
6. Lead paint grinding.
7. Lead working in the manufacture of storage batteries.
8. File cutting by hand.
9. Typesetting, cleaning or handling type in printing offices.
10. Glazing in pottery establishments.

II. PROCESS INVOLVING EXPOSURE TO IRRITATING DUSTS.

1. Process involving exposure to the dust of graphite in the manufacture of stove polish.
2. The operation of bronzing in the lithographing business, and the consequent exposure to bronze powder.
3. Cutlery grinding, and grinding or polishing in the manufacture of machinery, machine parts and metal supplies; and grinding, glazing or polishing on emery or buffing wheels.
4. Cutting, boring, turning, planing, grinding, doming, facing or polishing pearl shell.
5. Talc dusting in rubber works.
6. Sorting, dusting, cutting or grinding rags.

III. PROCESS INVOLVING EXPOSURE TO POISONOUS GASES AND FUMES.

1. Spreading rubber on cloth and the consequent exposure to naphtha in the manufacture of rubber goods.
2. The use of naphtha in cement work in rooms in shoe and rubber factories which are not provided with mechanical means of ventilation where the mixture containing naphtha is allowed to remain in uncovered receptacles.
3. Processes involving exposure to naphtha in the manufacture of japanned or patent leather.
4. Exposure to escape of fumes or gases from lead processes.

IV. PROCESSES INVOLVING EXPOSURE TO IRRITATING GASES AND FUMES.

1. Gassing in textile factories.
2. Singeing in print works, bleaching and dyeing works.
3. Dipping metal in acid solutions.

V. PROCESSES INVOLVING EXPOSURE TO EXTREMES OF HEAT AND OTHER CONDITIONS WHICH PROMOTE SUSCEPTIBILITY TO DISEASE.

1. Melting or annealing glass.

[Approved July 7, 1910.]

During the last year 100 children have been helped by the act: (*a*) 74 by being allowed to continue at their work under certain conditions; (*b*) 10 helped by being transferred to other departments or processes than the one which was deemed injurious; and (*c*) 16 by exclusion from work.

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## Book Reviews.

*Primer of Hygiene.* By JOHN W. RITCHIE and JOSEPH S. CALDWELL. Illustrated by KARL HASSMANN and HERMANN HEYER. Yonkers-on-Hudson, N. Y.: World Book Company. 1910.

*Principles of Public Health.* By THOMAS D. TUTTLE, B.S., M.D. Yonkers-on-Hudson, N. Y.: World Book Company. 1910.

These two volumes of the New-World Science Series aim to present the elements of hygiene in simple, popular form. The former is intended for school children of the lower grades. The latter, for children of a larger growth, is avowed by its sub-title to be "a simple textbook on hygiene, presenting the principles fundamental to the conservation of individual and community health." Both are to be commended for their temperate veracity in the treatment of various questions, particularly the use and effects of alcohol and tobacco, which in such books are sometimes sensationally and scandalously exploited. The illustrations possess a considerable degree of pictorial merit, though at times guilty of rather amusing exaggeration. On the whole, the books should prove interesting and beneficial for those to whom they are addressed.

*Education in Sexual Physiology and Hygiene.* A Physician's Message. By PHILIP ZENNER, M. D. Second edition. Cincinnati: The Robert Clarke Company. 1910.

The first edition of this book was reviewed on page 881 of the issue of the JOURNAL for Dec. 8, 1910, and there is nothing to add to that notice. The appearance of a second edition within so short a time seems evidence that the book has been well received by the purchasing public.

*Tuberculosis.* A Treatise by American Authors on its Etiology, Pathology, Frequency, Semeiology, Diagnosis, Prognosis, Prevention and Treatment. Edited by ARNOLD C. KLEBS, M.D. With 3 colored plates and 243 illustrations in text. New York and London: D. Appleton & Co. 1909.

This is the product of eighteen contributors, nearly all of whom are recognized authorities of the subjects of which they treat. All aspects of the tuberculosis problem, social and medical, are considered in this important work.

The book opens with a short historical sketch by Dr. Osler written in his inimitable style. Following this introduction the main subject matter is divided into six parts. At the end of

the volume are eight appendices and a bibliography. The reader is disappointed to find that the articles by Trudeau, Biggs, Von Pirquet, as well as that of Osler, are all very brief. Osler contributes only ten of the seven hundred and ninety-six pages of text. Von Pirquet's article on tuberculosis in children is a little over seven pages in length. Dr. Biggs' sole contribution to the volume is an introductory note to the section on prophylaxis which covers less than two pages. Dr. Trudeau has written less than three pages. This consists of an introduction to the specific treatment of tuberculosis.

One entire chapter of the book, that devoted to primary tuberculosis of muscles and fasciæ, occupies less than half a page and the remainder is left blank. Inasmuch as Cornet in his textbook has collected sufficient data on that rare condition, tuberculosis of the muscles, to furnish over five pages of interesting reading, it seems as if the writer could have filled a printed page instead of seven lines, especially as the editor deemed the subject of sufficient importance to assign a chapter to it.

Ravenel has written on the etiology of the disease and the mode of invasion. He believes that infection through the alimentary tract "occurs in a large proportion of cases," and that the intestinal origin of the disease in children is almost, if not quite, as common as infection through the respiratory passages. These conclusions are scarcely justified by the facts. In the excellent section on the pathological anatomy of the disease, Dr. Hektoen says "that at the present time the general opinion seems to be, however, that while the hematogenous and lymphogenous origin of instances of non-miliary pulmonary tuberculosis cannot be denied, the disease, in the large majority of cases, originates from a primary, air-borne infection of the lungs."

There is an admirable discussion of resistance, predisposition and immunity by Dr. Edward R. Baldwin. This is followed by an interesting chapter by the editor on the frequency of tuberculosis. Dr. Thomas D. Coleman gives a vivid description of the conditions that surround the negro in the South in his chapter on tuberculosis among the dark-skinned races.

Part III of the book is devoted to the symptomatology and diagnosis of pulmonary tuberculosis. This forms nearly one third of the entire volume and is from the pen of Dr. Charles L. Minor. This contains a masterly exposition of the physical signs of phthisis and will be a revelation to the reader familiar only with the meager and stereotyped descriptions found in the textbooks of physical diagnosis. Dr. Minor is an astute and careful clinical investigator, and in his section he has drawn freely upon the thorough knowledge of the disease which he has gained by painstaking study extending over a long period of time. His familiarity with the best that has been written on the subject is evident throughout the article, and many references to the literature are given. Much that is original will be found contributed by Dr. Minor, including a new system of signs for recording physical findings which seems to be an improvement on any now in use.

Dr. S. Adolphus Knopf has an article on public measures in the prophylaxis of tuberculosis which contains much of value to all engaged in the tuberculosis campaign.

There is a notable article on the therapeutic use of tuberculin by Dr. Lawrason Brown, who also writes clearly and concisely on organotherapy, serotherapy and "false specifics."

Dr. Thomas D. Coleman has written a helpful article on the home treatment by sanatorium methods. Strange to say, he does not advocate sleeping in the open-air, and there is too little emphasis on the importance of absolute rest. Paterson's system of graded exercise is described in considerable detail, but the writer fails to state that Paterson's patients were all selected cases who had at least three months of hospital treatment before their admission to the Finley Sanatorium. Furthermore, if a patient developed after exercise a temperature of 99.5° they were placed in bed and as strict a form of rest treatment enforced as if they had had typhoid fever.

Dr. Henry Sewall has contributed an essay on the physiology of climate. He has handled this difficult theme in a satisfactory manner.

Dr. W. Jarvis Barlow has a good section on climatic therapeutics which will be found useful in comparing the advantages and disadvantages of various health resorts.

Unfortunately throughout the entire volume there are no page references to books cited in the text. This throws a needless burden on the readers who wish to consult the authorities quoted. For example, Dr. Minor quoted W. H. Walshe as supporting his position that the typical râle in the incipiency of phthisis is a dry crackle and not a moist râle as has been asserted by recent American writers. Walshe's treatise on diseases of the lungs, heart and aorta is a work of over eight hundred pages and some little difficulty may be experienced in finding the original reference. Incidentally it may be pointed out that Dr. Walshe's name, which recurs many times in the article, is not spelled correctly. As no man in America is more familiar with Walshe's writings than Dr. Minor, we do not believe this error can be attributed to him.

It is to be regretted that so little attention is paid to the rest treatment by the different writers. Trudeau makes the statement that "the great value of rest while the symptoms of activity are present, and relative rest at all times, is as yet not generally appreciated." This is undoubtedly true and an examination of this latest work on the disease shows that some of the leading specialists do not as yet appreciate its importance. Less than a page of this large volume is devoted to the exposition of the rest treatment, while ninety-four pages are given to the specific treatment. Despite the fact that the contributions are of unequal value and that few of the innovations of the editor can be regarded as improvements, we think that the volume is the best work on tuberculosis that has appeared.

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## ARTHURIAN PHYSICIANS.

IN the legendary romances of King Arthur and the Round Table physicians play but a very small part. That there were doctors in the historic days on which those romances are based is unquestioned. As in many primitive communities, however, they belonged to the priesthood and practiced their function of physical healing only as an adjunct or accessory to their sacred duties. The British druids and the Welsh bards were presumably the physicians of Arthur's time, and scanty references to them are still to be found in prose and metrical romance.

In the tale of Ywaine and Gawin is mentioned Morgan the Wise, who "prepared the ointment which restored Owain to a state of health and sanity." Merlin himself was somewhat of a physician, though his medicine partakes more of the nature of magic and incantation, like the charms and spells believed to have such potency in warding off disease or defending from wounds, or like the potion which the old nurse brewed for Tristram and Iseult on their fateful voyage from Ireland.

Quite probably the Morgan referred to above was the same as Morgan Tud, King Arthur's chief physician, who has been the subject of a recent editorial in the *Lancet*. This Morgan Tud is chiefly mentioned in the story of "Geraint, the Son of Erbin," one of the Mabinogion or Welsh folk-tales which compose the "Llyfr Coch O Hergest," or "Red Book of Hergest." This collection of romances, composed in their present literary Welsh form in the fourteenth century, and first translated into English by Lady Charlotte Guest in 1838, form our most valuable and in some respects probably most accurate record of Arthurian times in Wales for they represent, not the later imaginings of French, German or English poets, but original Celtic tales handed down by bardic tradition for several centuries before being put into writing, as was the case with the Homeric epos in Greece.

The story of Geraint in the Mabinogion, upon which Tennyson founded his idyl of "Geraint and Enid," tells how, in the tourney for the sparrow-hawk at Cardiff, Edeyrn, the son of Nudd, was severely wounded by Geraint and repaired for succor to King Arthur, then keeping court at Whitsuntide at Caerlleon upon Usk. "And Arthur gazed a long time upon him, and was amazed to see him thus." And Edeyrn said, "I have met with much trouble, and received wounds unsupportable." And Arthur said, "Let this man have medical care, until it be known whether he may live." "And Arthur caused Morgan Tud to be called to him. He was the chief physician." And Arthur said, "Take with thee Edeyrn, the son of Nudd, and cause a chamber to be prepared for him, and let him have the aid of medicine as thou wouldest do unto myself, if I were wounded, and let none into his chamber to molest him, but thyself and thy disciples, to administer to him remedies. 'I will do so gladly, Lord,' said Morgan Tud." It is particularly interesting in this extract to note Arthur's admonition against intrusive visitors. Morgan's skill, or the *vis medicatrix naturæ*, seems to have been efficacious, for Edeyrn was successfully "healed of his grievous wounds."

Later in the same story Geraint himself is seriously wounded by Gwalchmai (the Welsh Gawain) who, recognizing his previously unknown opponent, brings him straightway to Arthur. Geraint, however, wishes to continue his quest in spite of his injury. "'Whether wilt thou go?' said Arthur. 'Thou canst not proceed now, unless it be unto thy death. He does not go from here until he is healed.' 'I had rather, Lord,' said Geraint, 'that thou wouldest let me go forth.' 'That will I not, I declare to Heaven,' said he." "And Morgan Tud and his disciples were brought to Geraint. Arthur also called Kadyrieith, and ordered him to pitch a tent for Geraint and the physicians. And Arthur and his hosts remained there nearly a month, whilst Geraint was being healed. And when he was fully recovered, Geraint came to Arthur and asked his permission to depart. 'I know not if thou art quite well.' 'In truth I am, Lord,' said Geraint. 'I shall not believe thee concerning that, but the physicians that were with thee.'

So Arthur caused the physicians to be summoned to him, and asked them if it were true. 'It is true, Lord,' said Morgan Tud. So the next day Arthur permitted him to go forth and he pursued his journey."

The pithy directness of Morgan's rejoinder seems rather characteristic of a physician's habit of thought and speech. The episode illustrates that in those days there existed, too, the plucky and rather stubborn patient who is unwilling to give in to his ailments, a type still met and still filling his overruling physician with secret admiration. Arthur's firmness, his unwillingness to believe Geraint's own testimony as to his cure, and his insistence on hearing the doctor's affidavit of recovery, are also characteristic. To them, probably, as much as to Morgan's ministrations, Geraint was indebted for the fact that he was discharged well, not "on request against advice."

In her notes on the story of Geraint, Lady Guest quotes from other contemporaneous sources to show that Morgan Tud's fame was widely diffused through the Celtic world of the time. "His reputation appears to have extended to Brittany, where the inhabitants still call by the name of Morgan Tut an herb to which they ascribe the most universal healing properties." She further writes as follows, in commenting on the office of chief physician:

"The chief physician, from the nature of his office, was necessarily in very constant attendance upon the royal person, and this was carried so far that not only was he unable to leave the palace without the king's permission, but it was ordained by the law of the land that his seat in the hall should be near to that occupied by the monarch. His lodging was appointed him with the Pennteulu, or the master of the household, and he received his linen clothes from the queen and his woolen clothes from the king. He was obliged to supply medicine gratis to all the four-and-twenty officers of the court, except in the case of one of the three dangerous wounds, which are explained to be a blow on the head penetrating the brain, a thrust in the body penetrating the intestines and the breaking of one of the limbs. And for every one of these three dangerous wounds he was entitled to one hundred and eighty pence and his meat. He was to take security of the family of the wounded man (that he should not be prosecuted) in case he should die of the medicine administered to him; and if he neglected this precaution, he had to answer for the consequence. The price of some of his medicaments was established by law. For a plaster of red ointment he was allowed to charge twelve pence, and eight pence for one of medicinal herbs."

This passage, like those quoted from the text, throws interesting light, not only on the medical manners and customs of the time, but on the physician's social status and the conditions of his practice. Insurance against prosecution was not then unknown, but was even enjoined as a regular procedure. The designation of the three most dangerous wounds seems quite in accord with modern regard, especially since, from the nature of the tourneys, where most wounds were received, fractures of the extremities must also often have been compound. Judging from the amount of hard fighting that went on, the chief physician should have been able frequently to charge his maximum fee of $3.60.

These episodes from a long vanished past serve to recall the beginnings of the medical art among our ancestors, the native Britons. Crude and superstitious as it often was, it was not more so than some of the pseudo-medical cults that persist to-day, and it contained the foundation of serious reputable practice. It was, of course, later superseded by the more cultivated science imported from the continent, but it is pleasant to think that at the dawn of our racial medical history still stands the august and venerable figure of Morgan Tud, the Arthurian physician.

## THE MORAL OF THE THREE-LEGGED CHICKEN.

Report from Alton, Ill., states that there was recently hatched in that town a chicken having three legs, on two of which were three toes each, and on the third were two toes. The hen who hatched this monstrosity is said to have killed it as soon as she observed its condition. This action on the part of the hen is similar to that observed in other animals towards the weakly, unfit or aged of their own species, and is probably analogous to the innate instinct of boys to tease and torment the weaklings among their playmates. At bottom this doubtless represents a natural provision for disposing of the unfit, that they may not perpetuate themselves or interfere with the strong. The obvious analogy is sometimes speciously employed as an argument for similar treatment of the unfit of the human species. It should be remembered, however, that in this respect man does not stand on the same footing as the other animals. In this con-

nection may be quoted a pertinent paragraph from the pen of Dr. Benjamin Moore, of Birkenhead, England.

"Do not let us think the less fit will overrun the earth if they be helped up. The exact opposite is the truth; they will overrun the earth if they are not raised up. If the bad environment is made the almost universal one, the lower type of creature in that environment will overrun the higher type. We are one species, we human-kind, and one class cannot rise or fall by itself; we must take the others up, or be dragged down ourselves along with them."

Of course there is a distinction between unfitness due to bad environment and that due to congenital defect, like that of the three-legged chick. The argument, however, holds good for the treatment of the unfit among men on a different basis from that practiced among the lower animals.

## SMALLPOX AND VACCINATION IN CUBA.

IN an editorial in the issue of the JOURNAL for March 23 we commented on the work of the United States Public Health and Marine-Hospital Service in the eradication of smallpox from the Philippine Islands. In the Public Health Report of the service for April 14, an article by Dr. Villoldo describes the similar work done in Cuba, affording "another conclusive proof that it is within the power of any community to eradicate the disease by means of vaccination." Since 1804, sporadic attempts at general vaccination were made in Cuba under Spanish rule, but the mortality from smallpox still ran high, in some years of epidemic amounting to over 1,000 in the single city of Havana. Immediately after the American occupation of the island in 1898, steps were taken to secure vaccination of all the inhabitants. In 1899 there were only 4 deaths from smallpox in Havana; in 1900 only 2. Since September, 1901, 718,406 vaccinations have been performed in Cuba by the United States government, by the quarantine service and by their successors under the native republic. As a result, smallpox is essentially extinct in the island. The credit for this belongs in large part to the efficiency and zeal of the officers of the United States Public Health and Marine-Hospital Service.

## THE PLAGUE IN ASIA.

REPORTS from Moukden, Manchuria, state that the International Plague Conference, which has been in session there since April 3, closed on Friday, April 28. It is believed that results of considerable value have been accomplished. In addition to a consideration of practical methods of suppressing and preventing plague epidemics, the conference has investigated the modes of its transmission and has decided that the pneumonic and the bubonic types of the disease differ only in manner of entrance of the infection, not in etiology. In connection with this aspect of the problem, experimental work of great merit is said to have been reported by the American delegates, Drs. Strong and Teague.

In Manchuria and China the plague is now announced to be essentially at an end. Report from London, however, states that the disease is still extensively prevalent in India, where it is said to have caused 43,508 deaths in February and 95,884 in March, an average of 1,553 deaths a day for the former and 3,093 a day for the latter month.

## MEDICAL NOTES.

CHOLERA AT ST. PETERSBURG. — On April 26 three suspected cases of Asiatic cholera were reported at St. Petersburg, Russia.

ILLNESS OF THE CROWN PRINCESS OF JAPAN. — It is reported from Tokio that the crown princess of Japan has been ill for several weeks with typhoid fever and that her prognosis is now considered very grave.

INCREASED DURATION OF LIFE IN BERLIN. — The average duration of human life in Berlin is reported to be nine years greater than it was in 1880. This is said to be largely due to the decrease of infant mortality and the improvement in general hygienic and sanitary conditions of the city.

GERMAN ABATTOIR IN CHINA. — Report from the United States consul at Tsingtau, China, states that the German government has recently completed the construction in that city of a model abattoir in which is to be prepared all the meat used in the German protectorate of Kiaochow. In connection with the abattoir is an experiment station for research in animal diseases.

TUBERCULOSIS AMONG CHURCH MEMBERS. — The latest bulletin issued by the National Association for the Study and Prevention of Tuberculosis presents figures indicating that the death-rate from all forms of tuberculosis is higher among church members of all denominations than for the general population in the regis-

tration area of the United States. This is held, however, not to be due to any causal or psychologic relation, but to represent probably a difference in accuracy of returns.

Restriction of Indian Opium Traffic. — Report from London states that negotiations between England and China are now in progress at Pekin for the immediate restriction and ultimate cessation of the exportation of opium to China from India. It is believed that this will be an important step in the final suppression of the illegal opium traffic not only in China, but throughout the world. The successful completion of these negotiations, it is hoped, may be announced at the opening of the International Opium Conference at the Hague on July 1.

Diminished Excess of Women in Germany. — The German imperial census of December, 1910, shows an interesting decrease in the excess of females over males in that country. In 1905 there were 1,033 females to every 1,000 males; in 1910 the proportion was 1,026 to 1,000. This change has taken place in spite of the fact that during this period the male death-rate has been 18.1 per 1,000 and the female only 16.2. The male birth-rate must, therefore, have been considerably higher than that of females. Such a condition should be welcome in a military community. Whatever the factors that produce it, the change illustrates the unaccountable automatic fluctuations by which natural process preserves the balance of population.

### BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, April 25, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 47, scarlatina 34, typhoid fever 5, measles 164, smallpox 0, tuberculosis 63.

The death-rate of the reported deaths for the week ending April 25, 1911, was 17.26.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, April 29, 1911, was 206, against 261 the corresponding week of last year, showing an decrease of 55 deaths, and making the death-rate for the week, 15.59. Of this number 110 were males and 96 were females; 199 were white and 7 colored; 134 were born in the United States, 70 in foreign countries and 2 unknown; 45 were of American parentage, 134 of foreign parentage and 27 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 45 cases and 2 deaths; scarlatina, 44 cases and 2 deaths; typhoid fever, 7 cases and 0 deaths; measles, 179 cases and 2 deaths; tuberculosis, 64 cases and 19 deaths; smallpox, 1 case and 0 deaths. The deaths from pneumonia were 31, whooping cough 4, heart disease 24, bronchitis 2. There were 10 deaths from violent causes. The number of children who died under one year was 40; the number under five years, 57. The number of persons who died over sixty years of age was 46. The deaths in hospitals and public institutions were 86.

Reappointment of Dr. Emerson. — The Civil Service Commission has recently confirmed the reappointment of Dr. Nathaniel W. Emerson, of Boston, as one of the trustees of the city infirmary department.

Benefit of Infants' Hospital. — The bridge tournament and pop concert for the benefit of the Infants' Hospital were held last week at Hotel Somerset, Boston, as announced in the issue of the Journal for April 20. It is believed that a considerable sum of money has been realized for the hospital.

Carney Hospital Alumni Association. — The twenty-third annual meeting of the Carney Hospital Alumni Association was held last week at Hotel Bellevue, Boston. The following officers were elected for the ensuing year: President, Dr. P. F. Butler; vice-president, Dr. E. D. Hurley; secretary, Dr. W. R. MacAusland.

Proceedings under Pure Food and Drug Laws. — It is stated that as a result of information filed in the United States District Court at Lowell, Mass., by the assistant district attorney, proceedings will be initiated against the manufacturers of Hood's Sarsaparilla on the ground that it is not, as alleged on the label, "a cure for all diseases arising from impure blood"; and against the manufacturers of "Wild Cherry Soda Water Flavor," on the ground that it does not contain genuine wild cherry, but is adulterated with benzaldehyde and alcohol.

American Breeders' Association. — A conference of the research committees of the Eugenics Section of the American Breeders' Association was held on May 2 and 3 at the Monson State Hospital, Palmer, Mass. This meeting took the place of the usual annual clinic and conference of the hospital. The chairman, Dr. W. N. Bullard,

sketched the work done on inheritance in epilepsy, and reports were presented from each of the committees. Other papers were read by Drs. Davenport and Southard.

Protection of Food on Saturdays. — In the issue of the Journal for March 16, we noted the intention of the Boston Board of Health to enforce in this city the ordinance requiring all foodstuffs exposed for sale to be kept suitably covered for protection from flies, dust and other sources of contamination. A number of marketmen have protested against this enforcement on Saturday afternoon and evening, alleging that their trade is then so much heavier than at other times that to comply with the regulation would make it impossible for them to attend satisfactorily to their customers. The Board of Health, however, has decided that the order must be complied with equally on all days of the week.

### NEW YORK.

Comparative Birth-Rates in New York. — Birth statistics recently given out by the Health Department go to show that what the government has found to be true in Rhode Island, Ohio and Minnesota is also the case in New York City: That foreign-born mothers are almost twice as prolific as native women. In the second generation of immigrants the women are less prolific than those of the first generation. Of the 127,021 children born in New York during 1910, 64,981 were males and 62,040 females. Among the negro children the sexes were almost equally divided, 1,031 boys and 1,007 girls. In one of the typical Jewish districts of the city the birth-rate in the last three years has averaged 54.90 per 1,000 of the population of the district; in a typical Italian district it has averaged 50.47 per 1,000, and in a negro district, 26.65 per 1,000; while in a native American well-to-do residential district, comprising nine blocks, it was only 6.95 per 1,000. It is a well-established fact, however, that the death-rate is much higher in the offspring of immigrants than among the children of native parents.

Hospital Saturday and Sunday Association. — The distributing committee of the Hospital Saturday and Sunday Association met and made the apportionments of its annual collection on April 24. The total amount of the collection was about $112,000, and the committee distributed $94,000; $9,847, in designated gifts, had already been sent to the hospitals specified, and the balance of the money collected had been paid out for expenses. The institutions which, by reason of the amount of their certified free service, were entitled to receive more than $4,000, with the sums awarded, were as follows: The Montefiore Home and Hospital for Chronic Invalids, $9,400; Mount Sinai Hospital, $8,669; St. Luke's Hospital, $5,345; Orthopedic Dispensary and Hospital, $4,786; German Hospital and Dispensary, $4,352; St. Mary's Free Hospital for Children, $4,136; New York Nursery and Child's Hospital, $4,094. While the collection this season was considerably larger than the average, it had been hoped that some $200,000 would be contributed.

Opening of the New Union Hospital in the Bronx. — The movement on the part of the physicians of the Bronx to have an independent general hospital in that borough has already materialized. In this they have been aided by a number of the local churches, and a lease was secured of the building formerly occupied by the Fordham Hospital, one of the city hospitals allied with Bellevue, for which a new building was erected not long since. The new hospital, which is to be called the Union Hospital, was opened for the reception of patients on May 1. It is different from other institutions of the kind in having medical men for its officers, and one of its special features is that all reputable physicians will be welcome to treat their own cases in it. The president of the hospital association is Dr. John F. Holmes, visiting physician to St. Joseph's Hospital for Consumptives; and the vice-presidents, Dr. Nathan B. Van Etten, who is chairman for the Borough of the Bronx in the Medical Association of the Greater City of New York, and Dr. Frederic W. Loughran, of the visiting staff of the Manhattan Eye, Ear and Throat Hospital. Dr. William A. Boyd, president of the Bronx Medical Association, and a number of other prominent physicians of the borough are also directly interested in the new hospital, for which there is a distinct need on account of the very rapidly increasing population in that section of the city.

Progress of the Anti-Vivisection Campaign. — Jerome D. Greene, general manager of the Rockefeller Institute, has issued a statement in which he says that one result of the agitation by supporters of the bill to appoint a commission to investigate "vivisection" in the state of New

York has already gratified those who see the importance of animal experimentation as an instrument of progress in medicine. (This bill is really worse than the other one now before the legislature, which seeks to impose severe restrictions on the practice, in that the commission it proposes, which on its face has a specious plausibility, is, in fact, to be an absolutely biased one, supported, not by the state, but by the anti-vivisectionists.) The hearing on the bill at Albany and the subsequent discussions of the subject among the members of the legislature have made it clear that public opinion, as represented by the newspapers and by legislators, is thoroughly convinced of the indispensable rôle which animal experimentation has already played in the treatment and prevention of disease, of the humanity with which it is generally conducted, and of the importance of allowing such experimentation full scope in the future. The public, Mr. Greene believes, desires only that the same intelligence and humanity govern the campaign now in progress. Legislators and other representatives of public opinion have been unwilling this year to listen to tales of cruelty to animals in experimental research. The false protestations of their sympathy with the aims of experimental medicine which we hear from those urging the passage of the Bayne bill must be interpreted in the light of the foregoing statement. These are the identical persons who have been working for restrictive legislation in the past. Their choice was either to give up the fight or else, by leaving the ranks of the avowed foes of medical progress and masquerading in the ranks of its friends, gain a vantage point from which their original fight for restrictive legislation might be renewed. The proposed commission of seven would include two persons of the anti-vivisectionist party, a senator and an assemblyman (who might well prove to be the sponsors of the bill, and consequently in favor of its backers), two medical men, who are not required to be in sympathy with experimental medicine, and a seventh member chosen at large. No wonder, he says, that the anti-vivisectionists are content to take their chances of securing restrictive legislation after an investigation by such a commission as this. Small wonder, too, that the State Medical Society, as well as the medical faculties, the research laboratories and the departments of public health in the state have protested against the farce that such an investigation might prove, and against the danger to which the public health and the progress of medicine might consequently be subjected through plausible and hasty legislation.

## Current Literature.

### Medical Record.

April 22, 1911.

1. Wyman, W. *Some Present-Day Health Activities.*
2. Bulkley, L. D. *Poliomyelitis and Rabies — On the Treatment of Epithelioma, Lupus, etc., with Thorium Paste.*
3. Barnet, J. *The Teaching of School Hygiene.*
4. Sill, E. M. *The Serum Treatment of Pneumonia in Infants and Young Children, with General and Comparative Mortality Statistics of this Disease.*
5. Carter, H. S. *Note on the Treatment of Diabetes Mellitus, with Table of Carbohydrate Equivalents.*
6. Gleitsmann, J. W. *Remarks on the Spontaneous Disappearance of Malignant Growths.*
7. Gross, M. *A Contribution to the Diagnosis of Duodenal Ulcer.*
8. Rouglin, L. C. *Reactions to Tuberculin.*

### New York Medical Journal.

April 22, 1911.

1. Knopf, S. A. *The Starnook and the Window Tent; Two Devices for the Rest Cure in the Open Air, and for Outdoor Sleeping.*
2. Wright, J. *A Contribution to the Study of Fats and Lipoids in Animal Tissue.*
3. *Klotz, H. G. *The Prevalent Misuse of the Prostate in Gonorrhea.*
4. *Ogilvy, C. *Chronic Backache, Etiology, Treatment.*
5. Frink, H. W. *Report of a Case of Psychogenetic Convulsions, Simulating Epilepsy.*
6. Goodman, E. H. *Some Clinical Studies in the Pepsin and Diastase Content of Urine.*
7. Gilbride, J. J. *Breaking Down of Wounds Following Operations.*
8. Proescher, F. *Studies of Antiformin Resistant Micro-Organisms found in the Brain of Animals Infected with Rabies.*
9. Neuhof, S. *Clinical Importance of the Impure First Sound at the Cardiac Apex.*

3. Klotz protests that the doctrine that the prostate takes part in every case of chronic gonorrhea is mischievous and dangerous, because it leads to neglect and oversight of the chronic lesions of the anterior urethra, and because it favors the indiscriminate application of prostatic massage which is apt to spread infection.

4. Ogilvy discusses the diagnosis and treatment of four important causes of backache often overlooked, viz., weak spine with postural deformity, scoliosis, sacro-iliac strain and flat feet. [L. D. C.]

### The Journal of the American Medical Association.

April 22, 1911.

1. Williams, J. W. *Obstetrics and Animal Experimentation.*
2. Scripture, E. W. *Treatment of Stuttering.*
3. *Strouse, S. *Diagnostic Value of Butyric Acid Test (Noguchi) in the Cerebrospinal Fluid.*
4. *Findley, P. *Treatment of Inoperable Cancer of the Cervix.*
5. Dayton, H. *Treatment of Exophthalmic Goitre with Thyroidectin.*
6. Newmark, L., Kugler, H. B. A., and Sherman, H. M. *Case of Cerebellar Tumor and One of Endothelioma of the Dura Mater of the Prefrontal Region.*
7. *Bevan, A. D. *Treatment of Acute General Peritonitis.*
8. Crabtree, G. S., *Reconstruction of Endo-Aneurysmorrhaphy. A Case Report.*
9. Medalia, L. S. *A Simplified Method of Staining Bacteria. Capsulated Bacteria in Body Fluids and Preparations for Opsonic Counts.*

10. Norris, C. C. *Report of a Case of Sterility in the Aged Cured by the Use of the Wylie Drain.*
11. Jervey, J. W. *Syphilitic Hypertrophy of the Inferior Turbinates with Report of a Case.*
12. Strauss, I. *Inoculations of Nasal Secretion from Patients with Acute Poliomyelitis.*
13. Montgomery, D. W. *Etiology of Verruca.*
14. Bernart, W. F. *Simple Apparatus for Intravenous Injection of Salvarsan or Other Drugs.*

3. Strouse describes the butyric acid test of Noguchi as follows: "One part (0.1 or 0.2 ccm.) of cerebrospinal fluid is placed in a test tube and to this is added five parts of a 10% solution of pure butyric acid in physiologic salt solution; the mixture is heated to boiling and immediately one part of normal sodium hydrate added and the mixture again boiled; in the presence of increased globulin a definite flocculent precipitate occurs, either immediately or within two hours. This definite precipitate must be differentiated from a faint cloudiness which normal fluids may give, but it requires only slight experience to recognize the difference between positive and negative reactions"; and claims that tests for increased globulin in the spinal fluid are easier to perform than is the total cell count, and have practically the same diagnostic value. The butyric acid test of Noguchi is convenient and accurate. The reaction is positive in general paralysis and cerebrospinal syphilis; negative in brain tumor, cerebral arteriosclerosis and psychoses. A positive reaction in a doubtful nervous case is presumptive evidence in favor of the diagnosis being a syphilitic or a parasyphilitic disease of the nervous system. In tabes dorsalis the reaction is present in only 33⅓%. This reaction is positive in all cases of acute meningitis and absent in meningeal irritation without actual inflammation. It is always present in tuberculous meningitis, and its presence is an aid in diagnosis. The absence of the reaction in cases of suspected tuberculous meningitis is of great value in excluding meningitis.

4. Findley urges, in cases of cancer of the cervix, in which doubt exists as to recurrence after a curettage, an exploratory abdominal incision, for a certain though not large percentage of these cases will be found operable who might otherwise be treated only by palliative measures. The author is also an advocate of Gellhorn's method of using acetone for the relief of hemorrhage and fetid discharge. This is as follows: The treatment should, if possible, be preceded by a thorough exocchleation of the ulcerated area. The curetted cavity is then carefully dried and from one-half to one ounce of acetone is poured into the wound through a Ferguson or other tubular speculum, with the pelvis of the patient raised. This should remain in contact for fifteen to thirty minutes. The acetone is then allowed to run out by lowering the pelvis and the cavity packed with a gauze strip soaked in acetone. After leaving the hospital this treatment can be carried on in the office or home two or three times a week. The healthy mucous membrane of the vagina and vulva may be protected by a layer of petrolatum. This treatment has been very efficient and gives great comfort to an otherwise miserable patient.

7. Bevan, in operating in the presence of peritonitis, tests the abdominal cavity with a female glass catheter. The thumb is placed over the open end, the point introduced into the pelvis, the thumb removed for an instant and replaced again and the catheter withdrawn. In this way pus or clear serum can be detected safely in the pelvis or general cavity. He uses wet dressings in all drained cases, and never uses the exaggerated Fowler position because of the very great fatigue which it causes most patients. [E. H. R.]

## Surgery, Gynecology and Obstetrics.

### April, 1911.

1. *Kümmell, H. *The Operative and Specific Treatment of Renal and Vesical Tuberculosis.*
2. Bevan, A. D. *Tuberculosis of the Kidney and Ureter.*
3. *Nixon, P. I. *Gonococcal Infections of the Kidney. Report of Two Cases.*
4. Kolischer, G. *Tuberculosis of the Tubes, Ovaries and Bladder.*
5. Thomas, B. A. *The Value of Chromo-ureteroscopy in Functional Kidney Diagnosis.*
6. Eisenstaedt, J. S. *Malignant Papillary Adenoma of the Kidney, with Discussion of a Case.*
7. Kaempffer, L. G. *Congenital Epulides (Odonto-Blastomata). A Clinical and Pathological Study.*
8. *David, V. C. *Intermittent Hydrarthrosis.*

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9. Braash, W. F. *The Radiograph Shadow and the Cystoscope.*
10. Vineberg, H. N. *Ventrosuspension by the Round Ligaments for Backward and Downward Displacement of the Uterus.*
11. Tracy, S. E. *The Closure of the Abdominal Incision.*
12. Barker, M. R. *Acute Post-Operative Dilatation of the Stomach Following Gastrojejunostomy. Report of a Case.*
13. Watson, L. F. *Treatment of Eclampsia.*

1. Kümmell points out that, since a tuberculous cystitis and nephritis may run a latent course in the beginning stages of the disease and cause few characteristic symptoms, it is quite common in the case of women to attribute their complaints to a diseased condition of the reproductive organs and to treat them for a long time for such troubles. It is known that gonorrhea in both male and female is an important predisposing etiologic factor in the later development of tuberculosis of the urinary organs. It is often surprising to find so few changes in the urine and a practically normal bladder in many cases of a widely destructive process in the kidneys. Catheterization of the ureter is absolutely essential in diagnosing renal tuberculosis. Spontaneous healing of renal tuberculosis does occur, but as a result of the process there is little if any of the functionating organ left. An early removal of the affected organ offers a more rapid recovery than waiting for an apparent and deceptive spontaneous healing. Transient improvement, at least in subjective symptoms, may be expected with the use of tuberculin injections, but this is in no way permanent and is later followed by real impairment.

3. Nixon considers that gonococcal infections of the kidney are quite rare. Excluding the cases associated with general septicemia and including the author's 2 cases there are 12 authentic cases, 6 pure and 6 mixed. The condition occurs more frequently in men. Hematogenous infection would seem to play a more important rôle than the ascending type. The symptoms are not different from those caused by other organisms. No diagnosis is of value unless the gonococcus can be demonstrated in the kidney. No case of suppuration in the kidney has been proven conclusively to be due to the gonococcus alone; in all probability a mixed infection is present in all cases.

8. David speaks of intermittent hydrarthrosis as an idiopathic hydrops of one or more joints occurring periodically in attacks lasting three to four days and with a course generally extending over a period of several years. The symptoms are typical with individual variations. The onset is usually sudden and often comes in the night, without previous trauma or other known exciting cause. Pain is variable, but stiffness is practically always present. There should be no redness or inflammatory signs. Efforts to cultivate organisms from the aspirated fluid have been unsuccessful. The knee is most commonly affected. Neurotic conditions seem to play the most important rôle in etiology. Some authors believe the condition to be an angioneurotic edema, certainly a neurotic basis is the only demonstrable one in many cases. [E. H. R.]

## Deutsches Archiv für Klinische Medizin. Bd. 102.

### Hept. 1-2. March, 1911.

1. *Handemann, E. *The Cause of the Diminished Resistance of Diabetics to Infection.*
2. Grafe, E. *The Study of Metabolism during Stuporous Conditions.*
3. Jacobaeus, H. C. *A Few Remarks on Syphilitic Cardiac and Arterial Disease from a Clinical and Pathologic Standpoint.*

4. *BÜDINGEN, T. *The Rest Cure for Heart Disease in Combination with Passive Motions.*
5. FORSTER, E. *Isolated Agraphia.*
6. CHRISTIANSEN, J. *The Oxygen Ion Concentration in the Stomach Contents.*
7. SCHOLZ, B. *Experimental Work on the Increase in Blood Pressure caused by Suprarenin in Healthy and Nephritic Animals.*
8. FEJES, L. *The Anemia-Producing Effect of Bacterial Hemolysins.*
9. SENATOR, H. *Metabolism in Fever.*
10. *ARMSTRONG, H., AND MÖNCKEBERG, J. G. *Heart Block in a Child Five Years Old Caused by a Primary Heart Tumor.*
11. WEILAND, W. *A Few Remarks on the Etiology of Different Forms of Diabetes.*
12. KAGAN, G. *Technic for Determination of Viscosity.*
13. RUSSOW, K. E. *Ring Bodies in Anemic Blood.*
14. GRAFE, E. *Answer to Dr. Senator's Remarks about a Previous Article in This Journal on Metabolism.*

1. Handemann has made a study in vitro of blood and serum with different sugar contents and its effect upon the growth of bacteria. By his observations he hoped to throw some light upon the disputed question of what is the cause of the increased liability of diabetics to infections. He concludes that blood in vitro with a sugar content of .5–1% forms no better medium for the growth of staphylococci than normal blood. The addition of sugar to blood within limits met in diabetes does not weaken the bactericidal power towards staphylococci. The opsonic index remains the same after sugar. As a result of his work he thinks that the lowered resistance in diabetes is due more to an injury to the cellular elements than to any special property of the blood serum.

4. Büdingen describes and shows a picture of the apparatus he has devised for passive motion in cases that are confined to bed. Also he considers at considerable length the value of passive motions in cardiac cases.

10. Those authors report a rare case of heart block in a child of five years, which turned out at autopsy to be due to a primary tumor of the heart. The pathological report on the tumor, which is very complete, classifies the tumor as a lymphangio-endothelioma of the auriculo-ventricular knot. [C. F., JR.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 13.

MARCH 30, 1911.

*1. KRAUS, R., AND v. STENITZER, R. *Second Report on the Treatment of Typhoid Fever with an Antitoxic Serum.*
2. DUNBAR, W. P. *The Cause and Specific Treatment of Hay Fever.*
3. MÜLLER, L. R. *General Remarks on the Physiology of the Vegetative Nervous System.*
4. HALBEY, K. *Etiology of Circumscribed Hyperidrosis (with Ageusia) on a Traumatic Basis. (Lesion of the Chorda Tympani.)*
5. BEYERHANS, G. *Clinical Experiences with the New Hypnotic Adalin.*
6. GLÜCKSMANN, G. *Auscultatory Phenomena in the Intestinal Tract and Their Diagnostic Value.*
7. *GÜMBEL, T. *Renal Decapsulation in Uremia.*
8. DAVIDS, H. *Eye Diseases after Treatment with Salvarsan.*
9. FRIEDLÄNDER, W. *The Technic of Intravenous Infusions in Office Practice.*
10. HEUSER, K. *Answer to Dr. Moller's Remarks on Heuser's Work on Tubercular Lesions from Bovine Tubercle Bacilli.*

1. Kraus and Stenitzer reported in 1909 on the value of an anti-endotoxic serum for use in the treatment of typhoid fever. This report includes some more cases treated with this serum and agrees with the former one in the value of this serum provided that it is used early in the course of the fever. They give it either subcutaneously or intravenously in doses of 20 to 40 ccm. The method of obtaining the serum is not mentioned in this article.

7. Gümbel takes up the subject of kidney decapsulation in a short article, especially in acute nephritis. In cases where other methods have failed and uremic unconsciousness is about to supervene, he favors the operation, as he thinks that the easing of the kidney pressure frequently gives marked relief. He does not consider that it has any effect upon the chronic lesions resulting from the acute nephritis. [C. F., JR.]

BERLINER KLINISCHE WOCHENSCHRIFT. No. 12.

MARCH 20, 1911.

1. v. ZEISSL, M. *Concerning the Previous Results from the Treatment of Syphilis with Salvarsan, and the Prospect of a Permanent Cure.*
2. DÖBLIN, A. *The Treatment of Nursing Infants with Salvarsan.*
3. POCHHAMMER. *Contributions on Resection of the Stomach.*
4. SCHLESINGER, A. *The Theory of Acute Gastric Atony.*
5. *PEL, P. K. *Acromegaly the Result of Fright.*
6. HONIGMANN, G. *The Diagnosis and Treatment of Cardiovascular Disorders in Practice.* (To be concluded.)
7. SCHEPELMANN, E. *Historical Sketch on the Knowledge of the Formation of Renal Calculi.*
8. HELLER, E. *Atopean in Gout and Acute Articular Rheumatism.*
9. STANGE, W., AND BRUSTEIN, S. *The Febrile Crises in Patients Suffering from Tabes.*
10. MAYER, T. *The Practical Value of "Asurol."*
11. SCHMIDT, G. *Innovations in the Compass of the Department of Sanitation of the Prussian Army during the Year 1910.*

5. Pel reports a series of three cases of acromegaly. In each of these cases the onset was gradual and the disease seemingly due to nervous shock following severe fright. The first case was reported twenty years ago; the other two are here reported in full with photographs and histories. [J. L. H.]

No. 13. MARCH 27, 1911.

1. HORT, C. *Constitution and Phthisis.*
2. MAGNUS-LEVY, A. *Intermittent Lameness and Disease of the Spinal Cord after Poisoning with Extractum Filicis Maris.*
3. HONIGMANN, G. *The Diagnosis and Treatment of Cardiovascular Disorders in Practice.* (Conclusion.)
4. BLOCHMANN. *An Important Form of Functional Intestinal Obstruction in the Period of Infancy, and Its Relations to Congenital Hypertrophy and Dilatation of the Lower Colon.*
5. WECHSELMANN. *An Alleged Case of Paralysis of the Peroneus after Salvarsan.*
6. TANAKA, T. *A Case of Fistula between the Gall Bladder and the Vermiform Process.*
7. BORCHARDT, M. *The Technic of Puncturing the Brain.*
8. *ZONDEK, M. *Decapsulation and Scarification of the Kidneys and Its Clinical Value.*
9. FRANKL, S. *Contributions to the Modern Treatment of Gonorrhea in the Male.*
10. RUNGE, E. *Leucorrhea and Its Treatment.*

8. The author, in a long and thorough article, goes over the whole question of these operative procedures on the capsule of the kidney. He draws his conclusions from the result of operations performed by himself and others, as well as from the results of animal experimentation. [J. L. H.]

WIENER KLINISCHE WOCHENSCHRIFT. No. 3.

JAN. 19, 1911.

1. EHRMANN, S. *Experiences in the Treatment of Syphilis with Arsenobenzol.*
2. *ULLMANN, K., AND HAUDEK, M. *Roentgenologic Studies on the Resorption of Mercury and Arsenobenzol Injections.*
3. KELLING, G. *Investigations on the Practical Value of the Meiostagmin Reaction of Ascoli in Malignant Tumors of the Alimentary Tract, and Comparative Investigations on the Meiostagmin Reaction and the Heterolytic Blood Corpuscle Reaction.*
4. BÜDINGER, K. *The Treatment of Varicose Ulcer of the Leg by Means of Plaster Stocking Bandage.*

5. WEIDENFELD, S. *An Economic Modification of the Electrolytic Epilation Procedure.*
6. SIMON, G. *The Investigation of the Cerebrospinal Fluid According to Mayerhofer.*

2. The authors find by x-ray observation that with large injections of mercury or salvarsan only a small amount is immediately absorbed. They, therefore, recommend the use of small and frequently repeated doses. [R. M. G.]

No. 4. JAN. 26, 1911.

1. v. FÜRTH, O., AND SCHWARZ, C. *The Inhibition of Adrenalin Glycosuria by Pancreatic Preparations.*
2. KREIBICH. *The Origin of Melanotic Skin Pigment.*
3. *SCHEPELMANN. *Meningitis and Curative Serum.*
4. *EHRLICH, H. *Nail Extension from Urgent Indication.*

3. From an exhaustive study of serum-therapy in meningitis, Schepelmann concludes that the immediate use of a single large dose of serum is more advantageous than that of numerous smaller doses, not only for the attainment of a quick result, but for the avoidance of serum sickness.

4. Ehrlich regards nail extension as a method, not for replacing, but for completing, plaster extension. He believes that in every case it should be employed before any other operative procedure, especially in urgent cases of compression of important vessels or nerves by dislocated fragments of bones of the extremities. He reports an admirable illustrative case from v. Eiselsberg's clinic at Vienna. [R. M. G.]

DEUTSCHE ZEITSCHRIFT FÜR CHIRURGIE. BD. 109.

[HEFT. 1–2. MARCH, 1911.

1. *HIROKOWA, W. *The Condition of the Ureters in Women in Genital Prolapse.*
2. SCHMIDT, H. *The Prognosis of Dislocation of the Shoulder and Posterior Dislocation of the Forearm.*
3. HESSE, F. *The Use of Local Anesthesia in Operations for Appendicitis, with Remarks on the Explanation of Appendiceal Pain.*
4. BIRCHER, E. *A Collection of Cases bearing on the Operative Treatment of Trigeminal Neuralgia According to Krause.*
5. KÖLLE. *Peroral Intubation according to Kuhn in Surgery of the Nose, Mouth and Pharynx.*
6. BAISCH, B. *Dislocation of the Radius in Pathologic Outward Bowing of the Forearm.*
7. GUNDERMANN, W. *Acute Vertebral Osteomyelitis.*
8. BERKOFSKY, K. *Experiences in the Operative Treatment of Gangrenous Strangulated Intestine.*
9. SCHLOESSMANN. *Contribution to the Knowledge of Cysts of the Bile Duct.*
10. STEPHAN. *Separation of the Epiphysis at the Neck of the Femur, and True Fractures of the Neck of the Femur in Youth.*
11. CUFFANO, B. *A New Method for the Treatment of Fractures of the Lower Jaw.*
12. LANGEMAK. *Strangulated Hernia of the Adneza in Infancy.*
13. CREITE. *Primary Tumor Formation of the Nipple.*

1. The author reviews the literature to some extent, pointing out that the possibility of pressure on the ureters by general pelvic prolapse was recognized by Froriep in 1824. He then goes on to show the various possibilities, reporting two cases of his own, in which pressure on the ureters occurred, and concludes as follows: Genital prolapse in women may cause suppression of urine due to pressure on the ureters. The compression may occur within the true pelvis and is caused by the pressure of the intra-abdominal part of the bladder. The place where the pressure occurs is on the last section of the ureter. Compression of the ureter may follow its prolapse through an opening in the muscular pelvic floor, within which the space must be shared with the uterus and with various varieties of cystocele. After the escape of the ureters through the opening in the pelvic floor, they come upon the inverted vaginal wall, within which the space must also be shared with the uterus and cystocele, and compression may result here.

The occurrence of a cystocele makes the lowest part of the ureters form a convex arm with its uretral orifice due to the change in position of the trigonum, which may partly hinder the emptying of the bladder. The article is very well illustrated. [J. B. S., JR.]

REVUE DE MÉDECINE.

MARCH, 1911.

1. LABBÉ, M., AND FURET, L. *Uric Acid Elimination and Alimentation.*
2. *LENOBLE, E., AND AUBINEAUX, E. *Myoclonic Nystagmus. II.*

2. The authors conclude that the dominant and constant factor of this syndrome is nystagmus, which in its simplest form is a "monosymptomatic variety of myoclonus." The syndrome is almost always congenital and often hereditary and occurs frequently in several members of the same family. [L. H. S.]

REVUE DE CHIRURGIE.

APRIL, 1911.

1. *LAUNAY, P., AND SEGUINOT. *Study of Bilateral Simultaneous Tubal Pregnancy, and a Case of Tubal Pregnancy with Three Fetuses.*
2. *COUDRAY, P. *Coxotuberculosis and Its Treatment.*
3. HEULLY, L., AND BOECKEL, A. *A Rare Form of Tumor of the Salivary Glands.*
4. SOLIERI, S. *A Point in the Pathogenesis of Biliary Colic in Some Forms of Non-Calculous Cholecystitis.*

1. The authors collect from the literature fourteen cases of simultaneous bilateral tubal pregnancy, and report a case of their own observation, apparently unique, in which there was a simultaneous pregnancy of both tubes and that on the right showed twins.

2. The writers report, with full microscopic descriptions and photomicrographs, a case of cylindroma of the sublingual gland. [R. M. G.]

BULLETTINO DELLE SCIENZE MEDICHE.

MARCH, 1911.

1. *FERRI, A. *Four Years of Endemic Typhoid.*
2. MODONESI, F. *Post-Diphtheritic Pseudotabes.*
3. *PICCININI, G. M. *Experimental Researches on the Natural Chloro-Iodo-Sodic Waters for Internal Use.*

1. Ferri presents notes and observations, with two schematic figures, on 142 cases of endemic typhoid which he observed in Bologna during the years 1906 to 1909 inclusive. The combined data for this period show a maximum of incidence between the ages of fifteen and twenty and during the month of October; a minimum in April. Of the nine deaths, only one was due to perforation, and none to hemorrhage.

3. Piccinini presents a historic, geologic account of therapeutic waters in general, followed by a study of "Corallo," a diuretic water of Leghorn, with a careful analysis and description of its physical and chemical properties. [R. M. G.]

## Obituary.

### JEFFERY ALLEN MARSTON, C.B., M.D., M.R.C.P., F.R.C.S.

JEFFERY ALLEN MARSTON, who died in London on March 31, was born on Dec. 2, 1831, at Martham, Norfolk, England. He was educated at the University of Glasgow, and in 1854 received the degree of M.D. from the University of St. Andrews. He immediately entered the British Army as an assistant surgeon and rose steadily through all grades of the service until in 1877 he was appointed secretary to the principal medical officer of the British forces in India. In 1882 he became sanitary officer to the Egyp-

tian expedition and was promoted to the rank of deputy-surgeon-general. In 1887 he visited the United States as delegate to the Ninth International Medical Congress at Washington. In 1888 he served as principal medical officer of the British forces in Egypt, and in 1889 was made surgeon-general and transferred to Gibraltar. After retiring from the service, he became president of the Army Sanitary Committee and was made an honorary-surgeon to the king. For the last thirty years he had been a member of the editorial staff of the *Lancet*. His life is typical of the career of the able and successful British army medical officer. He is survived by his widow, one daughter, and several grandchildren.

## Miscellany.

### SANITARY CONDITIONS IN PANAMA.

In a recent issue of a Boston daily paper, Mr. Henry Welles Durham, formerly a resident engineer in the city of Panama for the Isthmian Canal Commission, comments on the fact that at best sanitation and hygiene can only make tropical countries temporarily tolerable and safe for those habituated to cooler climates. The following extracts from his letter refer to a previous communication printed in the same newspaper:

"I notice in your issue for Wednesday evening, April 5, an interview describing conditions in the Canal Zone with as much exaggeration on the side of optimism as was formerly displayed in the other direction by the early detractors of the work of our government on the Panama Canal. While every one familiar with conditions there must be glad to observe the recognition which the great work of our organization is now obtaining, it seems hardly desirable or necessary that this work should be praised with exaggerated statement and actual misstatement. The results that our sanitary work have developed are sufficiently worthy of note to render it unnecessary that they should be brought to the attention of the American people by claims utterly incompatible with fact. Panama is not a health resort and never will be. I have no doubt that your informant has described his impressions accurately. They are those common to all visitors to the Canal Zone, who go there for a few days or weeks during our winter season, especially to those who are visiting a tropical country for the first time. As the writer states, 'Epidemic disease has been banished from the Isthmus.' The risks of malarial fever have been reduced to a minimum, but the climate has not been changed, and never can be. White men from temperate climates can work in such regions only for limited periods without deterioration and the climate is especially hard on white women. I have known of many cases of wives of canal employees whose health was injured by a prolonged stay in the tropics. The *Canal Record* frequently contains, in its obituary notices, names of young women from twenty-five to thirty-five years of age who died on the Isthmus. The health reports with their sick and death rates do not give us a complete history of the case for comparison with health conditions in Massachusetts.

"The death-rate in the Canal Zone as compared with that of other regions is a matter of no significance. It is the death-rate of a picked body of men, and a few women, in the prime of life, when under normal conditions they have no death-rate. Those who contract disease leave the Isthmus, so that their records are not included in those of the permanent population. The work done there by the sanitary department, in rendering it possible to prosecute this great work under fairly healthful conditions, has been marvelous and is worthy of the highest praise. Nothing can be gained by claiming for them that they have done the impossible."

### RESOLUTIONS AGAINST CONSOLIDATION OF MASSACHUSETTS REGISTRATION BOARDS.

Whereas, Senate Bill 193, having for its object the consolidation of the Massachusetts boards of registration in medicine, pharmacy, dentistry, veterinary medicine and embalming into one commission with a single registrar, who shall be intrusted with all the rights and privileges now resting in the several boards, has been given a hearing before the Public Health Committee of the Legislature, has been reported upon adversely, has been recalled and is now in the hands of said committee; and

*Whereas*, the experience of several years has fully demonstrated the efficiency of these boards and their value to the public; and

*Whereas*, the proposed combination would not only lower the standard established by them, but would practically destroy their efficiency; and

*Whereas*, with one minor exception, each of the boards under consideration is more than self-supporting, is of no expense to the commonwealth, and entails no hardship upon any one; now, therefore, be it

*Resolved*, by the members of the Middlesex South District Medical Society, in annual meeting assembled, that any action by the Legislature tending to destroy the individuality and the authority of the above-mentioned commissions will result in deplorable harm to the public, for whose sole welfare they were created.

*Resolved*, that the members of the said Middlesex South District Medical Society do hereby most solemnly and emphatically protest against the enactment of any legislation, as of Senate Bill No. 193, or of any similar bill having for its object the curtailment of the powers of the present boards of registration, as above mentioned.

*Resolved*, that a copy of these resolutions and protest be sent to each Senator and Representative within the limits of said Medical Society by its Secretary.

Walter L. Bond, M.D.,
*Secretary.*

## THE MARIE FEODOROVNA RED CROSS PRIZES.

THE American Red Cross announces, in connection with the International Conference of the Red Cross which will be held at Washington, D. C., in May, 1912, that the Marie Feodorovna prizes will be awarded.

These prizes, as may be remembered, represent the interest on a fund of 100,000 rubles which the Dowager Empress of Russia established some ten years ago for the purpose of diminishing the sufferings of sick and wounded in war. Prizes are awarded at intervals of five years, and this is the second occasion of this character. These prizes in 1912 will be as follows: One of 6,000 rubles; two of 3,000 rubles each; six of 1,000 rubles each.

The subjects decided upon for the competition are:

(1) Organization of evacuation methods for wounded on the battlefield, involving as much economy as possible in bearers. (2) Surgeon's portable lavatories for war. (3) Methods of applying dressings at aid stations and in ambulances. (4) Wheeled stretchers. (5) Support for a stretcher on the back of a mule. (6) Easily portable folding stretcher. (7) Transport of wounded between men of war and hospital-vessels, and the coast. (8) The best method of heating railroad cars by a system independent of steam from the locomotive. (9) The best model of a portable Röntgen-ray apparatus, permitting utilization of x-rays on the battlefield and at the first-aid stations.

It rests with the jury of award how the prizes will be allotted in respect to the various subjects. That is to say, the largest prize will be awarded for the best solution of any question irrespective of what the question may be.

Further information may be obtained by addressing the Chairman Exhibit Committee, American Red Cross, Washington, D. C.

## INTERNATIONAL SANITATION CONGRESS IN PARIS.

EARLY last March it was announced from Paris that an international sanitation congress on Asiatic cholera and bubonic plague was to be summoned to meet in that city in May. At that time the following statement was issued:

"This new convention has seemed necessary because of last year's outbreak of cholera in southern Italy and the present epidemic in Manchuria, which recalls the worst days of the plague in India. These outbreaks, though tragic in themselves, serve a useful purpose by giving an opportunity for experiment with modern methods of relief and prevention. The latest sanitation congress on cholera, yellow fever and the plague was held in December, 1903. Since then scientific progress has been rapid. The most recent discoveries and improvements must be adapted to the new needs, while adhering to the difficult principle — maximum safety with minimum regulation. To facilitate the work of the congress, the government has ordered the permanent committee of the Office International d'Hygiène Publique to outline a program for the discussions. Since its establishment in 1907, this committee has gathered and published complete data on all questions of sanitary organization."

Intelligence as to the exact dates of the convention has not yet been received, but its sessions will probably begin early in the coming month.

## OLIVER CROMWELL'S HEAD.

ANTIQUARIANS in England have been considerably exercised of late over the genuineness of the head of Oliver Cromwell, which has been recently exhibited in London. It is certainly known that after the Restoration, in January, 1661, on the anniversary of King Charles's execution, the bodies of Cromwell, Bradshaw and Ireton, previously buried in great honor, were exhumed, hanged on Tyburn Hill, subsequently decapitated, and the heads impaled on pikes and set up on Westminster Hall. After a time, it is said, Cromwell's head was blown down in a great storm, secreted by a sentry of republican sympathies, and by him handed down as a precious family treasure, subsequently sold to various owners until it came into the hands of one Dr. Wilkinson, great-grandfather of the present possessor. The story seems authentic enough, and the face is said to bear a close resemblance to the portrait of the Great Protector, "wart and all." Whether or no the tale be true and the relic genuine, probably the contemplation of the head, as of other post-mortem material, gives as little idea of the living man, — to use Dr. Holmes's phrase, —as one gets of the Fourth of July from inspection of the fireworks on the following morning.

## ERADICATION OF PLAGUE IN CALIFORNIA.

THE weekly report of the United States Public Health and Marine-Hospital Service for April 21 contains an article on the "campaign against plague-infected squirrels in California," describing the work done by the service in the attempt to eradicate this disease. That ground-squirrels and other small rodents are carriers of plague infection was demonstrated in 1908. Since that time an extensive campaign has been carried on for the extermination of these animals by hunting, trapping and poisoning. A squirrel-free zone has thus been established and maintained around the cities of San Francisco, Oakland, Berkeley and Alameda, on San Francisco Bay; and in addition there has been a general distribution of poison in other cities and counties of California. As a result, not only has the plague disappeared from this state, but there has been a marked diminution in the number of fleas and flies, a diminution in the incidence and mortality of other preventable infectious diseases, and an improvement in building construction and in the general hygienic condition of the community. Disease prevention, like honesty, is not only right, but it is the best policy.

## Correspondence.

### THE AMERICAN MEDICAL ASSOCIATION IN LOS ANGELES.

Los Angeles, April 21, 1911.

*Mr. Editor:* It is difficult for a physician who has lived and practiced in Los Angeles for thirty-six years to adopt the viewpoint of one who has never been here and tell him of the things that would most interest him.

Los Angeles is situated in a valley, with the Sierra Madre Mountains in view just a few miles to the east, and the Pacific Ocean twelve and fifteen miles to the west.

In this valley are, besides Los Angeles, the beautiful city of Pasadena and the seaside cities of Long Beach, Venice and Santa Monica. Between these towns are orange groves, walnut groves and vineyards. Electric cars with ten and fifteen minute service connect all these places, and, in fact, you can get on an electric car in front of your hotel in Los Angeles and be at the ocean in twenty minutes, or be on top of a mountain in an hour.

The physicians and the citizens generally of Los Angeles feel that a great honor is being conferred upon us in giving Los Angeles the privilege of entertaining the American Medical Association.

From what I can learn of previous meetings, preparations for generous hospitality to all have never surpassed the arrangements for this California session.

Monday, June 26, will be devoted to getting guests suitably located, and there will also be sessions of the Arizona Medical Society, of the American Academy of Medicine, American Proctological Society and of the American Medical Editors' Association.

Several of these societies will have their own banquets on Monday evening, but the chief banquet will be that of the American Medical Editors' Association, which will be given at the Hotel Alexandria, and will be a very beautiful and elaborate affair.

Every physician will receive, as usual, on arrival a book giving the program and all the events, both scientific and social, and also containing the coupons for every social function. Of course the physicians of Los Angeles have nothing to do with the arrangements of the scientific program, but we are devoting ourselves entirely to arranging for the social functions, and for the various excursions.

There is an executive committee of ladies, and a committee of one hundred ladies for information and general hospitality. The address of each one of these ladies will be in the telephone directory, which will be in every room in every hotel. These ladies will be ready to answer the call of the wife or daughter of any physician who may be visiting here, and it will be their pleasure to do everything to make this visit a pleasure.

On Tuesday afternoon a tea will be given at the Alexandria. Seventy-five of our local ladies will be hostesses. This will be an opportunity for our wives and daughters here to get acquainted with those from the East.

On Wednesday morning there will be an automobile trip for the ladies, with light refreshments at the Los Angeles Country Club, which is in charge of another committee of ladies. In the afternoon there will be a garden party on the beautiful grounds of Dr. and Mrs. W. Jarvis Barlow. This will be from 4 to 6.30, and it is expected that not only the wives and daughters, but all of the visiting physicians, will avail themselves of the hospitality of this delightful home.

Dr. Barlow is dean of the Los Angeles College of Medicine of the University of California, and president of the Los Angeles County Medical Association.

On Wednesday night the president's reception will be given at the Shrine Auditorium. This will be in all respects a brilliant affair, and will be followed by a ball that will last from 10.00 to 12.00.

Thursday morning the visiting ladies will be given a rest, or, if they desire, Los Angeles ladies will take them in small groups to seaside resorts.

Thursday afternoon, from 4.00 to 6.00, Dr. and Mrs. Norman Bridge will give an al fresco musical in the tropical gardens of their home in Chester Place. It is expected that the physicians as well as their wives and daughters will attend.

Dr. Norman Bridge has a national reputation, and it will be a delight to himself and Mrs. Bridge to make their guests happy.

On Thursday evening from 8.30 to 12.00 there will be an informal smoker and vaudeville performance. While it is intended to especially please the gentlemen, yet, if the ladies will pardon the smoke, they will all be made welcome, and they will find the occasion enjoyable.

It is thought that the scientific program will close on Thursday.

At 11 A.M., Friday the 30th, automobiles will be furnished for all guests, both ladies and gentlemen, for a drive to and through Pasadena, and at noon they will be ushered into the magnificent sunken gardens, consisting of eighty acres, surrounding the winter home of Adolphus Busch. Here will be given, to the accompaniment of the best music that California can furnish, a *Festin del Jardin* (Spanish luncheon). Mr. Busch has given orders to spare no expense. Beeves and sheep will be barbecued on the ground, and the leading Spanish dishes will be served Q. S. This will all be served by waiters in Spanish costume. After the luncheon, lemonade and cigars will be served to the little groups that will be glad to remain listening to the music in this fairyland. *Truvadores* in Spanish costume will go from place to place singing to the music of guitars and mandolins.

Mr. Busch has also left orders that a number of acres of oranges and grape fruit be protected until this occasion, and every guest will be privileged after the luncheon to pluck an orange for himself.

It is thought that five thousand will be served on this occasion, but if there are more they will not be neglected.

At 3.00 o'clock the scene is transferred to the Tournament Arena, where for an hour there will be Roman chariot races that will provide a few thrills even for doctors, who may think they have gotten past the thrilling period. On Jan. 1 of each year, at Pasadena's Tournament of Roses, one hundred thousand gather to see these races. They will then be brought in the automobiles to their hotels in Los Angeles.

After dinner special cars will be provided taking them to entertainments especially prepared for them at the beach cities, and they will be allowed to return home by midnight.

Saturday they will be taken twenty-five miles out at sea to Catalina Island where a typical fish barbecue will be served.

Besides these formal functions, there will be many other entertainments and excursions. San Diego, Riverside, Redlands and Santa Barbara are all clamoring for you.

A retired doctor at Uplands, a beautiful foothill town, thirty miles from Los Angeles, who has a large orange grove, writes to the committee that he is going to keep ten acres of that grove especially for the visiting doctors, and he wants to give them the fruit on that whole ten acres. He desires you all to come out and be his guests for the day.

There are numerous other proffers of hospitality coming to the committee somewhat similar to this. Those who come to this meeting of the American Medical Association will get a more comprehensive idea of Southern California in five days than the man who comes alone can get in five weeks.

Very truly yours,
Walter Lindley, M.D., LL.D.,
*Editor Southern California Practitioner.*

### THE BEST ROUTE TO SEE THE WONDERS OF THE WESTERN SLOPE.

The Dekum Building,
Portland, Ore., April 21, 1911.

*Mr. Editor:* Having observed in your issue of April 13 a communication from Dr. George W. Gay entitled "The Best Route to See the Wonders of the Western

Slope," I would like to add a few words to what Dr. Gay has said there.

In Dr. Gay's third paragraph, in speaking of the trip from Los Angeles to Yosemite Valley, he says there are two ways of going, one through Bakersfield and Fresno and the other by the coast line to San José. He truly says the coast line way is the best. At the time of year that the American Medical Association is going to meet it will be very hot in Bakersfield and Fresno, so it is much better to take the coast line even if a little longer. In going north after leaving San Francisco it is possible to make a side trip either from Ashland, Ore., or from Klamath Falls to Crater Lake National Park. This lake is in the crater of an extinct volcano and is a very wonderful natural scenic attraction.

Any one interested in seeing the orchards in the beautiful valley of the Rogue River near Medford, Ore., would not find a day wasted by stopping off there.

Those who wish to go trout fishing would find good fishing at that time of year either by going to Newport, Ore., from Albany or by a trip up the Mackenzie River to Mackenzie Bridge from Eugene. There are other streams to be reached from Roseburg and Eugene.

From Portland one can make a short side trip to the seacoast or can take a steamer up the Columbia River to see the wonderful scenery of the Columbia gorge.

Dr. Gay speaks in his fifth paragraph about going to Banff from Seattle and then if any one wishes it coming back to Seattle and then to the Yellowstone Park. If I understand his method correctly it means about one thousand miles extra travel. In returning from Alaska one can leave the steamer at Vancouver, B. C., then by rail to Banff and from there down through the Kootenay Lakes to Spokane and from there to the Yellowstone Park without going back to the coast.

I am sure all the visitors will find the doctors in any of these cities extremely hospitable and anxious to promote the pleasure and welfare of those from the East.

Very truly yours,

GEORGE S. WHITESIDE, M.D.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, APRIL 15, 1911.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | 1,551 | 490 | Waltham | 3 | 0 |
| Chicago | — | — | Brookline | 8 | 1 |
| Philadelphia | — | — | Chicopee | 3 | 1 |
| St. Louis | — | — | Gloucester | 4 | 2 |
| Baltimore | — | — | Medford | 5 | 3 |
| Cleveland | — | — | North Adams | 8 | 5 |
| Buffalo | — | — | Northampton | 9 | 2 |
| Pittsburg | — | — | Beverly | 2 | — |
| Cincinnati | — | — | Revere | 5 | — |
| Milwaukee | — | — | Leominster | 7 | 1 |
| Washington | — | — | Attleboro | 3 | 1 |
| Providence | — | — | Westfield | 8 | 1 |
| Boston | 243 | 53 | Peabody | — | — |
| Worcester | 45 | 12 | Melrose | 4 | — |
| Fall River | 41 | 22 | Hyde Park | 5 | 2 |
| Lowell | 37 | 10 | Woburn | 2 | 2 |
| Cambridge | 39 | 10 | Newburyport | 3 | 2 |
| New Bedford | 33 | 8 | Gardner | 7 | 5 |
| Lynn | 21 | 5 | Marlboro | 7 | 1 |
| Springfield | 25 | 8 | Clinton | 1 | — |
| Lawrence | 26 | 13 | Milford | — | — |
| Somerville | 17 | 2 | Adams | 8 | 3 |
| Holyoke | 17 | 6 | Framingham | — | — |
| Brockton | 14 | 3 | Weymouth | — | — |
| Malden | 16 | 2 | Watertown | 5 | 1 |
| Haverhill | 15 | 2 | Southbridge | 0 | — |
| Salem | 21 | 3 | Plymouth | — | — |
| Newton | 3 | 1 | Webster | 5 | 0 |
| Fitchburg | — | — | Methuen | 3 | — |
| Taunton | 14 | 3 | Wakefield | — | — |
| Everett | 10 | 3 | Arlington | 2 | — |
| Quincy | — | — | Greenfield | 3 | — |
| Chelsea | 13 | — | Winthrop | 2 | — |
| Pittsfield | 8 | 2 | | | |

## SOCIETY NOTICES.

THE NORFOLK DISTRICT MEDICAL SOCIETY.—The sixty-first annual meeting will be held at the New American House, Hanover Street, Boston, May 9, 1911.

A. H. HODGDON, M.D., *President.* BRADFORD KENT, M.D., *Secretary.*

THE NEW ENGLAND PEDIATRIC SOCIETY. — The sixteenth meeting will be held on Saturday, May 13, 1911, in Sprague Hall, Boston Medical Library, 8 The Fenway, at 8.15 P.M. The following papers will be read: 1 (*a*) "The Successful Passage of an Unusual Foreign Body through the Intestine of a Child; (*b*) The Importance of the X-Ray in the Diagnosis of Obscure Fractures in Children," William Pearce Coues, M.D., Boston. 2. "Vincent's Angina," Edwin H. Place, M.D., Boston. 3. "Anaphylaxis in Its Relation to Pediatric Practice," Godfrey R. Pisik, M.D., New York. Light refreshments will be served after the meeting.

JOHN LOVETT MORSE, M.D., *President.* FRITZ B. TALBOT, M.D., *Secretary.*

ANNUAL MEETING, NEW HAMPSHIRE MEDICAL SOCIETY. — The one hundred and twentieth annual meeting of the New Hampshire Medical Society will be held at Memorial Hall, 21 Centre Street, Concord, Thursday and Friday, May 11 and 12, 1911.

D. E. SULLIVAN, M.D., *Secretary.*

AMERICAN CLIMATOLOGICAL ASSOCIATION. — The twenty-eighth annual meeting will be held at Montreal, Canada, June 13 and 14, 1911. A preliminary day Monday, June 12, will be spent at Saranac Lake.

GUY HINSDALE, M.D., *Secretary.*
Hot Springs, Va.

## RECENT DEATHS.

CLIFTON ELLIS WING, M.D., M.M.S.S., died at Jamaica Plain, May 1, 1911, aged sixty-two years.

EDWIN FARNHAM, M.D., M.M.S.S., retired, died at Cambridge, April 16, 1911, aged sixty-eight years.

## BOOKS AND PAMPHLETS RECEIVED.

U. S. Department of Agriculture. Bureau of Entomology. Circular No. 136. The Distribution of the Rocky Mountain Spotted-Fever Tick. By F. C. Bishop.

Experimental Investigation. By Frederick Gaertner. Reprint.

Hygiene of Pregnancy. By Dr. E. S. Harris, Blue Springs, Mo.

Bulletin of the Lying-In Hospital of the City of New York. June, 1910, and September, 1910.

Flies and Mosquitoes as Carriers of Disease. By Wm. Paul Gerhard, C.E.

Starling Ohio Medical College. March bulletin, 1911–1912.

Submucous Resection for the Correction of Septum Deflections with a Description of the Author's Special Instruments and Their Use in 130 Cases. By Myron Metzenbaum, B.S., M.D. Reprint.

The Fight against Preventable Diseases. By Eugene H. Porter, A.M., M.D. Reprint.

Rational Psychotherapy. By David S. Booth, M.D. Reprint.

Diseases of the Stomach and Intestines. By Boardman Reed. Third edition. E. B. Treat & Co.

The Dawn of the Health Age. By Benjamin Moore. London, England: J. & A. Churchill.

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## Original Articles.

# RECENT EXPERIMENTAL WORK ON THE "FUSION" OF NERVES AND ITS PRACTICAL BEARING ON INFANTILE PARALYSIS. REPORT OF A CASE OF INFANTILE PARALYSIS TREATED BY THIS METHOD.*

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THIS evening I wish to address you on a subject which I must confess is still imperfectly clear in my own mind, but, on account of the suggestiveness of certain facts that have been brought out in my research, I feel that it might perhaps interest you if I presented a brief summary of certain aspects of the work, so far as it has progressed.

Therefore I wish this report to be regarded as preliminary only, hoping that at some later time I shall have the opportunity to present to this same section the salient points with greater clearness and conviction.

Before it is possible for me to explain the term "nerve fusion," it is necessary briefly to define certain other terms that I am obliged to use. First the term, "nerve pattern." The nerve pattern is simply the anatomical arrangement or grouping of the fibers in the cross-section of a nerve. This arrangement of the fibers has a definite relation to their peripheral distribution. Thus the main trunk of the sciatic, studied high up, consists for the most part of two large funiculi, one of which is destined to become the external popliteal nerve and the other, the internal popliteal nerve. As we follow the nerve down, each of these two trunks is found to redivide into smaller branches, each branch representing the ultimate distribution of the fibers to certain muscles, skin areas, etc.

(Although it is possible by such a cross-section of a nerve to understand the significance of its component parts as regards distribution, it is not possible to recognize from this aspect alone what the function of the individual fibers is, namely, which are motor, which sensory, which vasomotor, etc. To be sure, there is a rough distinction based upon the size of the fibers, the motor fibers usually being quite large and the vasomotor fibers quite small, but as they are all mingled indiscriminately in the individual funiculus, the nerve pattern gives us but little information as to this point.)

Although the main nerve trunk divides into branches and the branches redivide into others, it is not to be supposed that the individual fibers themselves form any division; each fiber is a single branch of a neurone and remains so all through its course. It begins as an axone from its cell of origin in the gray matter of the cord or a ganglion, and, although in its route it may be subject to the many relational diversities as it passes through spinal root, plexus, nerve trunk and peripheral branch, it forms no break or division in itself until it finally arrives at its place of peripheral distribution in its respective end organ, muscle, skin-area or blood vessel. Thus we see that the nerve pattern may change continually as we follow the nerve down toward the periphery, although each fiber maintains both its anatomical and physiological integrity in relation to a given cell.

In considering the subject of anastomosis of nerves, Stoffel [1] recently demonstrated the necessity of distinctly and definitely understanding the nerve pattern of normal nerves. By a series of gross dissections in hardened nerves of a human infant, he worked out the nerve patterns or the topography of the cross-section, as he referred to it, of some of the larger nerves, such as the median and sciatic. That his point is well taken, there can be no question. I mention it here because it suggests one of the main problems with which we are obliged to deal, and this problem is whether we can artificially change the nerve pattern. Such authorities as Langley and Anderson, Kilvington and Osborne and others have maintained that the pattern can be changed under certain conditions, and they refer to such a change of pattern as a nerve distortion. The object of a nerve distortion is apparent. It is hoped by such a means to redistribute fibers which supply a set of muscles or other tissues in such a way as to increase their functional value.

It goes without saying that a change of nerve pattern or a nerve distortion cannot be obtained without, temporarily at least, seriously disturbing the nerve tissues at the point where the distortion is desired, and we must consider the methods by which such a distortion may be gained. I know of only two such methods; one I have already referred to, namely, nerve anastomosis, which consists in suturing different nerves together so as to form new combinations, and the second is the method of which I wish to speak more especially this evening, namely, that of nerve "fusion."

Before defining the term nerve "fusion," it is necessary for me to say a few words as to the salient features of nerve regeneration after division or crushing, because the important points in nerve fusion depend upon certain anatomical features in this process. It is well known that division of a peripheral nerve is followed by a very characteristic process below the point of division. Clinically, the striated muscles supplied by the nerve no longer respond to the will. Experimentally, after the first few days the peripheral stump loses its reaction to mechanical and electric stimuli, and anatomically, after the first week or so, one finds in the stump below the division that the myelin sheaths have broken up, that the axis-cylinders no longer stain and that there takes place within the scar a marked proliferation of cells and nuclei. These proliferating cells are supposed to be from the sheaths of Schwann. Still later the myelin completely disappears and the main characteristic of the scar in the nerve is simply the increased number of cells just

* Presented at the Section of Experimental Medicine of the Cleveland Academy of Medicine, Feb. 10, 1911.

[1] Zeitschr. für Orthop. Chir., Bd. 25, 1910.

referred to. If the separation between the two divided stumps is maintained, some regeneration in the fibers of the peripheral stump will take place, but only up to a certain point, which varies under local conditions. We may ascribe such beginning regeneration to the part taken by collateral nerves which were divided during the original operation and which now offer the fibers in the peripheral stump a new central connection. But practically speaking, we may regard a nerve cut off from the central stump as sufficiently degenerated to deserve the name. Supposing now that instead of trying to keep the stumps separated after division, we resuture at once or, what amounts to the same thing, we tie a ligature about the nerve and immediately remove it. At first the result is just the same as described above in the peripheral stump, but presently we note a great change, for regeneration of the fibers occurs to a marked degree and if the scar is not too great, the process will in most cases go so far as finally to develop a perfect nerve, physiologically and anatomically.

As to the scar that forms at the place of division under this condition of immediate approximation of the stumps, very clear descriptions of its essential features have been offered by those who have studied this subject most deeply, including such authorities as Ranvier, Cajal, Perroncito, Neumann, Stroebe, Bethe and others. Although these authors disagree materially in their interpretation of certain features, they do agree in most of the essential anatomical facts. The first important fact is the proliferation of the nuclei of the cells of Schwann, which I have mentioned above; axis-cylinders, myelin sheaths and other component parts of normal nerve fibers, including the perineurium of the funiculus, practically disappearing in this mass of new cells. These cells are elongated and run in every direction. On account of this proliferation of tissue the nerve here forms a swelling which is sometimes referred to as a bulb or a neuroma. The length of the bulb indicates the length of the scar. Weeks later, the bulb contracts and approximates the size of the normal nerve, and in its interior, regeneration begins from the central stump, the axis-cylinders pushing their way among the proliferated cells and becoming surrounded with new myelin which, in all probability, is also of central origin. Regeneration meanwhile may make some headway in the peripheral stump, and by some process which is not yet definitely understood the regenerated fibers from the central stump passing through the scar join those in the peripheral stump, or mingle with them so as ultimately to form a new and continuous nerve with every anatomical and physiological feature of normal nerves.

I wish now to call your attention to four distinctive points in the formation of this scar which are pertinent to the present problem. In the first place, the perineurium and endoneurium of the crushed nerve are lost in the proliferated mass of cells. Secondly, when the fibers begin to redevelop they do not develop in straight lines or in parallel lines so as to follow the direction that they had in the central stump, but for a considerable time at least they mechanically follow the course laid down by the arrangement of the cells in the scar, and this means that they run in every direction — downward, upward and obliquely and cross each other frequently (Perroncito, Stroebe, Neumann, etc.). This is an extremely important point. Thirdly, as the regenerating fibers push their way between the cells, they present peculiar endings, often forming fibrillæ which branch from various parts of their growing ends (Ramon y Cajal, Poscharissky, Perroncito). Fourthly, and later in the process, these same fibers are seen to rearrange themselves in an extraordinary and striking manner. From the indiscriminate positions which they were obliged to take on account of the mechanical conditions of the proliferated cells, they now form into straight and parallel lines, conforming to their respective beginnings in the central stump. In a word, in the last stage of regeneration in the scar, the nerve fibers tend to form into their original nerve pattern. But not only do the nerves tend to take their original nerve patterns in the scar, but as they pass through it they also tend to seek out their original tracts in the peripheral stump, and this means that each fiber, whether motor, sensory, vasomotor, pilomotor or secretory, takes up its original function. This tendency is usually ascribed to chemotaxis (Langley). Thus we see that the direction of the new fibers in the scar is influenced by two factors according to the stage in the process; first, the factor of new cell formation which guides the fibers in every direction, and later, the factor of chemotaxis which tends to send the fibers into parallel directions and into their original tracts.

Having shown in this summary fashion the salient features of the scar in a divided nerve, I believe you will now be able to understand what I mean by nerve "fusion." Nerve "fusion" is nothing more nor less than a method which attempts to render permanent the arrangement of the fibers in that stage of regeneration when they run in more than one direction. It is a method for taking advantage of the confused nerve pattern of the scar in the transitory stage and fixing that pattern in the hope that, when regeneration is finally completed, the fibers will have grown down different tracts from those which they originally occupied, thus defeating chemotaxis. So in a case of paralysis, if some of the fibers in the nerve are degenerated and their sheaths are empty, the question arises whether the interposition of a proper scar in the course of that nerve may distort its nerve pattern so as to enable the empty tracts to become occupied again with new fibers. Not only this, but we may also inquire whether some of the branches that form on the sprouting ends of the divided axis-cylinders may also be made to enter tracts which have previously been empty, thus gaining not only a new distribution of fibers, but also an actually greater number.

The theoretical basis of nerve "fusion" being

made plain, the next question is, What method may we use to obtain and maintain a pattern of such peculiar characteristics? Before speaking of this method, I must mention one other point which is based upon the researches of others. This point is that the length of the scar is of great significance in governing the amount of regeneration (Howell and Huber, Perroncito, etc.). Thus it is known that a very short scar such as may be obtained by good approximation of the nerve ends will not change the nerve pattern, and that too long a scar will practically prevent regeneration, because of the interposition of too much mechanical resistance. This point, — the length of the scar, — therefore, was a suggestion to begin with, and the thought was not far removed to use ligatures to obtain fusion. With ligatures we could not only crush the nerve so as to produce the necessary scar, but by using more than one we could control the length of the scar by the distance that they were placed apart. Such ligatures, moreover, enabled us to gather more than one nerve into the formation of the new pattern. Finally, by using ligatures of absorbable material, namely, catgut, we could keep the crushing factor under surgical control from the point of view of time, because such a ligature disappears after a few days. In this way the method was evolved and this method consists simply in tying one or more nerves with two catgut ligatures with the intention of producing a sufficiently long scar to cause distortion of pattern. In order to be sure that crushing was produced, we applied a hemostat to the nerve between the ligatures. The ligatures have been placed $\frac{1}{8}$ to $\frac{1}{4}$ inch apart.

As regards the plan of our experiments we have tried several, the two chief ones being, first, the fusion of two adjoining nerves where one has had a large piece excised above the fusion, and, second, the fusion of two adjoining nerves without excision. We have usually worked upon the popliteals because they are easy to approach and supply antagonistic muscles. The animals used were chiefly full-grown dogs. We let the animals run three or four months before testing them.

These tests have been made from two points of view; first, from the point of view of regeneration, and, second, from the point of view of the crossing fibers. As regards the tests for regeneration, it may be stated that our evidence has most clearly shown that it does take place to a marked degree, but of course not in every case. These tests have been clinical, physiological and anatomical.

As regards the tests for nerve crossing, we have been guided, in a measure, by the work of Kilvington and Osborne, who have done their experiments by the older method of combining nerves by suture. Although in a number of cases we have found that impulses will apparently pass through the scar from one nerve to another, we have not been able, as yet, to rule out electrotonus, for we feel that the currents used have been rather too strong. Even so, our negative results are far more numerous than our positive ones. From the anatomic point of view, however, we have demonstrated that the fibers actually cross. But we have not been able to obtain all positive tests in a given case, one case showing histological crossing and no return of function, another showing return of function but no experimental evidence of crossing, etc. Nor have we been able to show, at least to our own satisfaction, that the redirection of the fibers which we can demonstrate anatomically at certain stages remains permanent. Some of the preparations are, however, extremely suggestive, and, taken as a whole, I believe that we have sufficient evidence to justify us in making further experiments along this line.

Besides doing these experiments on normal nerves, we have also been engaged in disturbing the nerve pattern after lesions had been produced in the spinal cord by earlier operations, hoping that by thus emptying some of the nerve tracts by a central lesion we might in the second operation so distort a nerve trunk as to fill up these empty tracts. We have also experimented on the anterior roots directly, and in other cases on the cauda equina, with special reference to paralysis of the tail. The account of these experiments must be postponed for special reports; I merely mention them in passing in order to indicate that the question of nerve "fusion" is not yet solved, even if one can prove that the nerve pattern in the normal can be altered, because after an original paralysis you must deal not only with degeneration of fibers, but also with fatty degeneration of the muscles originally supplied by those fibers, to say nothing of the fact that the empty tracts after a long-standing paralysis tend to become occluded by connective tissue and later to disappear entirely.

Of course the great practical import of such work as nerve "fusion" and nerve anastomosis is its bearing on infantile paralysis. Much has lately been written upon the pathology of this disease, but the points which are of essential importance from a surgical point of view have been known for some time. These points are that the disease affects chiefly the anterior horns of the gray matter, causing a degeneration or disappearance of the ganglion cells located there, with a resulting paralysis which is chiefly motor.

As regards nerve "fusion" for this condition, we can at once see that theoretically the operation might prove to be of value. It is, of course, a grave question as to whether there is any hope if the muscle tissue is degenerated beyond a certain degree, so that the time interval after the original paralysis might prove to be of great importance in considering the fusion; moreover, it cannot be expected that such a procedure could be helpful in every case. But, generally speaking, there are at least theoretical grounds for thinking that nerve "fusion," if properly done, might in selected cases be of some benefit.

As regards the comparative value of ordinary nerve anastomosis by suture with nerve "fusion" as we have described it, I would not like to make any important comparison at present, except to

say this: that although there is no question as to the theoretical value of the older method, such a method would seem to be much more limited in its applicability than the one I have just described, because that method (nerve anastomosis by suture), to be intelligently done, implies an accurate and definite knowledge of the cross-section topography of the nerves, and this knowledge is usually difficult and often impossible to obtain. Nerve "fusion" does not require this. Besides this seeming advantage of "fusion" over suture where two or more nerves are brought together, nerve "fusion" in addition aims to distort the pattern in the individual funiculus, even without the help of a second nerve. This may prove to be of importance. I might also add that on account of the immediate degeneration below the scar it does away with temporary activity of such muscles as may be producing deformity on account of contractures, thus serving the purpose that a tenotomy might serve in other cases; thus while the nerves below the scar are temporarily out of commission, the limb may be placed in a neutral position of best function so that when regeneration is complete, such deformity as existed becomes obliterated.

The work which I mentioned has been in progress for several years, and from our experiments it seemed that we had sufficient grounds to justify us in trying a nerve "fusion" in at least one human case. Such an opportunity arose last fall. The case I chose was not on account of its favorable characteristics, but one which was in a measure quite unfavorable, — the paralysis was not recent and only one important muscle had preserved anything like its normal integrity.

REPORT OF THE CASE.

This case (Y. C.) first seen Aug. 25, 1910. Nothing important in the family history. Child was learning to walk at the age of nine months, when she was taken with an illness lasting about six weeks, losing the use of her legs. Eighteen months later started to walk again and has remained in a crippled state up to the present time, limping badly. Is wearing store braces.

Sept. 16. — Examination.

*Status.* — Well developed and nourished except for legs, which show evidence of paralysis. Patient is very lame but can walk alone. (The left leg shows control of the hip. She can hold the knee extended, but only in external rotation. Hamstrings under control. The foot in a position of equinus of 45°, the tendo achillis being drawn. She can flex and extend the toes and can evert the foot. No power in inversion or dorsal flexion.)

*The right leg.* — She can control the hip and extend and flex the knee in practically normal fashion. She can dorsal flex the ankle and can extend and flex the toes. She seems to have no other control of this right ankle. The foot can be put into marked calcaneus although no permanent deformity has yet resulted. The foot can be extended to only a right angle at the ankle. Stimulation of skin with sharp point over same lower leg and foot shows no anesthesia. This same (right) lower leg examined further with faradic current, using a du Bois Reymond coil (Ludwig) of the vertical type with 10,000 windings of the secondary and a one-pint Daniell cell, and shows the following: The only motor point found is that of the tibialis anticus, half way down the front of the leg. Minimum stimulation for this muscle obtained with secondary at 123 mm. No motor point could be found for the long extensor of the toes, but occasionally with strong stimulation over belly of muscle the toes would dorsal flex. Currents over soleus-gastrocnemius and tibialis posticus so strong as to be unbearable on the observer's fingers produce no response in plantar flexion or inversion respectively. Touching electrode to the sole causes flexion of toes. No response was obtained in the peroneal muscles. Stimulation over peroneal nerve occasionally causes dorsal flexion of ankle.

Knee jerk sluggish on the left and lively on the right.

*Measurements.* — Anterior superior spine to internal malleolus, right, 19.5 inches; left, 19 inches. Circumcumference of thigh at perineum, right, 11 inches; and left, 10 inches. Circumference of calf at maximum point, right, 6¾ inches; left, 7 inches.

The most suggestive thing which can be obtained in the right lower leg is the loss of power in the gastrocnemius-soleus and tibialis posticus, suggesting a marked paralysis of the internal popliteal.

Sept. 17. — Ether operation at Lakeside Hospital (service of Dr. D. P. Allen) [2]: Incision 2½ inches long made on the back of thigh of the right leg, the lower end of the incision being 2 inches above the knee-joint. Biceps freed and the sciatic exposed. At the place exposed, sciatic could be separated into the external and internal popliteal divisions. These two divisions carefully stroked for several minutes with a tenotomy knife until they bled profusely, then squeezed together into a pulp with a hemostat for a distance of ½ inch and tied with two sutures of plain catgut ¼ inch apart (No. 1 size). In squeezing, the ankle dorsal flexed sharply. Skin sewed with catgut. In accordance with a suggestion by Dr. Briggs, the foot was put up in equinus on account of the calcaneus tendency and the plaster run from the toes to the groin.

(On the left foot, tenotomy of the tendo achillis. The peroneus longus exposed, and by making a hole in the interosseous membrane was passed between the fibula and tibia. The tendon passed through from behind and sutured into the tibialis anticus while the latter was on the stretch, so as to hold the foot at a right angle. Tibialis anticus then shortened. Chromicized catgut used for suturing the tendons and plain catgut for the skin. Foot put up slightly within a right angle and slightly inverted.)

Sept. 18, condition good. No temperature. Toes remain pink on both sides.

Sept. 21, condition good. No temperature. On being asked to move the toes of the right foot, she fails to do so.

Oct. 29 (patient at Rainbow Cottage — Convalescent Hospital), plaster removed on both legs. On the right, wound healed by first intention. Sensation and motion tested. Sensation seems present except in the heel, where there is some callus where she does not seem to feel the point of a pin. From a functional point of view, there is no return of power. She cannot move the ankle in any direction nor can she move the toes, but the foot now readily goes into equinus, there being no longer any resistance in the tibialis anticus.

Measured for a brace with double uprights and with rigid ankle-joint to hold the foot in slight equinus. New plaster applied holding the foot in some equinus and varus.

The other foot shows healing by first intention, the foot remaining in varus. Measured for a valgus brace. New plaster. Told not to be allowed to get on her feet.

Nov. 23, child had developed some little sloughs

[2] For the privilege of operating on this case, the author is indebted to Dr. C. E. Briggs, acting surgeon.

on the fourth and fifth toes of the right foot. In trimming back the plaster another slough was produced. The toe sloughs have healed up and the last one is almost healed. There is no return of movement yet in the toes or in the ankle, but a peculiar resistance suggesting beginning tonicity seems to be developing on the surface of the dorsum. At this place, when she is told to attempt movement, a faint twitching is sometimes noticed.

Dec. 2, sloughs have healed. No movement has returned. Tickling and pin pricks are certainly perceptible. Braces tried on.

Jan. 5, 1911, child wearing braces which seem to fit properly. She has no power in motion yet in the right foot. The four outer toes show some swelling and some blueness. Patient stood upon her feet and stands alone. To try a few steps.

Jan. 11, child steps very well on her feet with the braces on. No motion has come into the foot. There is now a peculiar reflex, namely, flexing the ankle causes flexion of the knee and hip. Sensation has returned well, the child feeling sharp objects distinctly.

Jan. 18, distinct motion noted in dorsal flexion. With tickling of the foot she bends her ankle up and outward a few degrees and usually flexes the four outer toes a little. After the foot comes up it goes back into a right angle, but it cannot be stated whether that is due to the elasticity of the tissues or to contraction of the soleus. Child walking a little. Measurements of calves, right, 6½ inches; left, 6½ inches.

Jan. 25, foot to-day shows a distinct improvement. She has very slight motion in plantar flexion. She has slight motion in inversion. She everts quite well and she can both flex and extend the toes. There is also noticeable a peculiar blueness of the anterior part of the foot, extending from the ends of the toes to about 2 inches back to a line where the blueness stops rather suddenly.

Feb. 7, some improvement. She now bends her ankle downwards. This movement is over an arc of 10°. She moves it upwards about 10°, inwards a few degrees and outward about 20°. Her toes can be moved upward and downward. Compared with her condition before the operation she has all the motions of the ankle and foot, and the total amount represented is about the strength represented in the tibialis anticus before the operation. At the present time the tibialis anticus does not stand out, out of proportion to the other muscles. The color in the front part of the foot is much like normal, the blueness having disappeared.

Feb. 16, case brought into the experimental laboratory and the electrical tests tried. The skin, however, was very sensitive so that the tests had to be postponed. Motion tested again. She can evert, plantar flex, and dorsal flex about 15°. Inversion is less. Circumference of calf, 6¾ inches.

In presenting this case only the facts are submitted and no definite conclusions are as yet to be drawn. One thing may, however, be stated with reasonable assurance, namely, that the control of the patient's ankle is now different from what it was before the nerve fusion, although the total amount of power is as yet no greater. A final verdict can only be given when she reaches that stage where no further improvement is going on, when a supplementary report of the case will be made.

In closing, I wish to acknowledge the important assistance which has been rendered to me by Prof. Geo. N. Stewart, director of the laboratory, and Dr. Marine, also of the laboratory. The former has made many valuable suggestions in the physiology of the research, and the latter has done the same from the anatomical point of view.

## A CASE OF HEMIATROPHY FROM SCLERODERMA.*

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WHILE a moderate amount of asymmetry between the two halves of the body is an ordinary condition, the more extreme degrees, an actual hemiatrophy, are comparatively rare. Congenital hemiatrophy, as a rule, is due to some malformation or defective development of one half the brain occurring in fetal life. Acquired hemiatrophy, which is far more common, is generally due to some cerebral lesion occurring in childhood and is ordinarily associated with infantile hemiplegia. It may also happen that anterior poliomyelitis affects the arm and leg on one side, giving rise to a partial hemiatrophy, but this is rare.

Probably the rarest form of hemiatrophy is that associated with scleroderma, of which I have been able to find only six reported cases. It seems justifiable, therefore, to present this additional case, which is, so far as I know, the only one reported in this country.

David B., aged eighteen, single, a native of Boston, presented himself at the neurological service of the City Hospital in April, 1907. Except for a little "rheumatism" on the father's side, the family history was not remarkable. He had always been well, except for measles and scarlet fever in childhood. He had never used alcohol or tobacco and denied any venereal disease.

He had worked for two years as a metal-worker, handling tin and sheet-iron, but not lead. Two years before coming to the hospital he had had some sharp paroxysmal pain in the left leg, followed by spasmodic clonic contractions of the muscles of the thigh and slowly progressive wasting of the whole leg. At about the same time he noticed some pigmented nodules in the skin on the left side of the epigastrium, on the anterior aspect of the upper third of the left thigh, just below the knee and along the lower inner border of the gastrocnemius. For six months he had had some "drawing" sensations and spasm near the sternal attachment of the abdominal muscles, and for two weeks some spasm and weakness in the left upper arm, especially in the biceps. The left leg had grown progressively weaker. Except for the symptoms above noted, however, he was in good health and able to work regularly. Occasionally, if he kept one position too long or worked in a cramped position, the leg would give out for a few minutes. There was no headache, vertigo or visual disturbance. He slept

* Case presented at the joint meeting of the New York and Philadelphia Neurological Societies with the Boston Society of Psychiatry and Neurology at Boston, Nov. 23, 1907, and at a clinical meeting of the Neurological Section of the Royal Society of Medicine in London, Dec. 15, 1910.

well and showed no mental peculiarities. There were no disturbances of respiration or circulation; the appetite and digestion were good; micturition was normal and the sexual apparatus was not affected. He had noticed no difference in sweating.

On examination, the noteworthy feature was a wasting of the left half of the body. This was not very noticeable in the face, which showed only a moderate asymmetry, such as is often seen, but it was evident in the arm and very marked in the leg. There was also some shortening of the leg, causing a slight inequality in the gait and leading to a slight compensatory tilting of the pelvis and lateral curvature of the spine, and a tilting of the shoulder-girdle in the opposite direction. The left scapula was rotated upwards and outwards in the "angel-wing" position. There was a band of atrophy over the lower ribs, from the fifth to the tenth, apparently involving both skin and muscles and leading to a thinning of the chest wall, so that the pulsations of the heart were very noticeable. This did not extend back of the anterior axillary line. There was much wasting of the muscles, as shown by the greater prominence of the bones about the hip and knee. The left side of the glans penis seemed somewhat smaller. The following measurements,



FIG. 1.

together with the photographs (Fig. 1), will show the degree of atrophy, and the wasting of the chest wall:

| | Right. | Left. |
|---|---|---|
| Semicircumference of head, | 25 cm. | 24 cm. |
| Semicircumference of chest, | 37.5 cm. | 36 cm. |
| Acromion to olecranon, | 38 cm. | 38 cm. |
| Circumference upper arm, | 25 cm. | 23.5 cm. |
| Length of ulna, | 25.5 cm. | 25.5 cm. |
| Circumference fore-arm, | 23.5 cm. | 21.5 cm. |
| Circumference wrist, | 16.5 cm. | 16 cm. |
| Circumference knuckles, | 21 cm. | 21 cm. |
| Anterior superior spine to internal malleolus, | 88 cm. | 85 cm. |
| Circumference thigh, | 44 cm. | 35 cm. |
| Circumference calf, | 32 cm. | 25.5 cm. |
| Circumference foot, | 22 cm. | 21.5 cm. |

The skin upon the left side of the body was thinner, smoother and more translucent. The condition varied and was most marked over the thigh and over the atrophied region of the chest



FIG. 1.

wall. The superficial veins were very apparent and there was very little hair upon the left leg, and less hair over the entire half of the body, even on the left half of the pubes and in the left axilla. The skin was not adherent to the subjacent parts and did not seem to compress them, being fairly elastic. The loss of hair is shown in the photographs, and the patient himself had noted that it had gradually diminished, being formerly as thick as on the right side. In the regions mentioned in the history and indicated

in the diagram (Fig. 2) were a few firm, slightly elevated nodules, brownish-yellow in color, coalescing into a broad, flat mass and freely movable with the skin, of which they seemed to form a part. A few dilated capillaries were seen about them. The patch in the epigastrium was about 10 cm. in diameter, and that on the thigh 10 cm. long by 2 wide. Dr. C. J. White, who kindly examined them, pronounced them scleroderma.

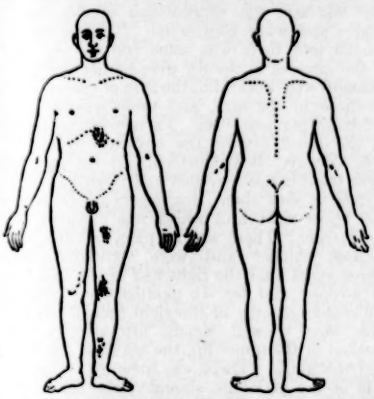


Fig. 2. Distribution of the sclerodermatous patches. April, 1907.

The various movements were performed normally, except that the movements of the left arm and leg were decidedly weaker than those of the right. There was a slight twitching of the lips and tongue, but no hemiatrophy of the tongue. As he stood there were single, quick contractions of the left quadriceps every few seconds which drew up the patella. On electrical testing the muscles on the left side responded more quickly and to a weaker current than the muscles on the right, which I attributed to the greater thinness of the skin. No tests of the electrical resistance, however, were made. Sensation for light contact and vibration ($C^2$, 512 per second) was subjectively a trifle plainer on the left side, but the lightest touch could be felt on the right, and no difference was noted for sensations of heat, cold or pain. The abdominal reflex was livelier on the right side; the plantar, cremasteric and gluteal reflexes on the left; the plantar reflex was of the flexor type. The right knee-jerk was a trifle greater than the left and there was a patellar twitch on that side; the ankle-jerks were equal.

The pupils were equal and regular and reacted to light and accommodation, but the left pupil reacted somewhat sluggishly. The vision in each eye was 20-15. The visual fields and eye-grounds were normal. There was a spur in the left nostril and an enlarged lower turbinate, but the pharynx and larynx were symmetrical and normal. Examination of the hearing and ears showed nothing remarkable. Examination of the lungs showed normal resonance and respiration. The heart was not enlarged and there were no adventitious murmurs, but the apex-beat, as already mentioned, was very noticeable. The pressure was 127 mm. in the right arm and 121 mm. in the left (wide cuff). The blood-count showed 6,200,000 red and 4,600 white on the right, 5,000 white on the left. Hemoglobin, 95. Stained specimens, normal. Urine 1,025, acid, no albumen or sugar; sediment, calcic oxalate crystals, a few uric acid crystals and an occasional leucocyte. A skiagraph showed no noticeable difference in the bones of the leg, in spite of the shortening.

Under galvanism and thyreoid extract (gr. iii–vi, t.i.d.) he showed some improvement. The drawing sensations disappeared, the twitching became much less and his general strength improved. The Röntgen-ray and the high-frequency current were substituted for galvanism later. He has felt well and kept constantly at work. After some months, however, another small sclerodermatous patch appeared to the left of the median line and half way between the xiphoid cartilage and the umbilicus, and the other patches have grown larger. The atrophy has also increased a little both actually and relatively to the other side.

A careful search through the literature of the subject has revealed six other cases of complete hemiatrophy and two of partial hemiatrophy which I will cite briefly:

1. Takács. Man, thirty-two. Family history negative. Always subject to headaches. Two and a half years earlier he began to have tearing pains in the right arm and leg, with some weakness. There was a feeling of tension in the right lower leg. He also noticed that he no longer sweated on that side. The whole right side was smaller, the right eye more deeply set, the right pupil and the right palpebral opening smaller. The right side of the thorax was flatter, and the fingers of the right hand somewhat contracted. The right upper arm was 2 cm. and the right forearm 4½ cm. smaller. The leg was 2½ cm. smaller. The skin on the right side of the face and the back of the right hand was thinner. Sensation and electrical reactions were normal. The trouble was attributed to vasomotor changes.

2. Henschen. Man, forty-six. Family and previous histories unimportant. At the age of fourteen he sprained his left ankle slightly; some time after he had erysipelas in that leg, after which ulcers appeared from time to time on both legs. From this time on he began to have prickling and pain in the left half of the body. Six months later he had severe migraine and changes in the trunk and extremities on the left side, which, after another six months, involved the face. Otherwise he was in good health. At the time of observation there was a marked atrophy of the left face, involving the maxillary bones, extreme atrophy of the left arm and leg, and slight atrophy of the left side of the trunk, which was much greater in certain areas, notably on the lower ribs. In the arm the muscles had wasted very markedly and the bones were

shortened. In the leg the muscles had almost disappeared. The skin on the atrophied areas was very thin, pigmented, smooth and shiny like parchment, and in some places adherent to the bone. The hair and the sweat glands had disappeared. Some of the articulations were ankylosed and the muscular strength was greatly impaired. Cutaneous sensibility was normal except that the affected leg was somewhat more sensitive to cold and electricity. At times there were fibrillary twitchings in the muscles of the affected regions.

3. Steven. Woman, twenty-four. Family and previous histories negative. Eleven years before there was noticed a patch of hardened skin in the right groin and the right hand was swollen and stiff. Similar patches appeared on other parts of the skin and finally on the right temple. A year later the skin ulcerated in various places and then cicatrized. This ulceration lasted three or four years and recurred toward the end of life. At the age of twenty-one an atrophy of the right side of the face and of the right half of the body was observed. Three years later there was marked atrophy of the face, especially of the forehead and chin, and the skin had a brownish, parchment-like appearance. There was marked wasting and contracture of the arm, with claw hand and fibrous ankylosis at the elbow. The arm was 2¼ inches smaller round, there was little motion, and the skin was tightly bound, showing the brownish, parchment-like character with many depressed cicatrices, pink, shiny and with radiating capillaries. The right breast was smaller, and the skin over the abdomen was hide-bound, brownish and parchment-like, with atrophy of the underlying tissue. There was a similar atrophy in the leg, with contractures and changes in the skin. Sensation was normal and she could walk fairly well. About a year later she died as a result of an operation for ovarian tumor. The left motor cortex was somewhat thinner macroscopically. The right anterior horn of the cord was less in size, the motor cells were somewhat degenerated, the neuroglia less dense, and there were perivascular changes in the cord, medulla and pons. There were also degenerated nerve fibers in the cervical and lumbar plexuses.

4. Lunz. Woman, twenty-six. Family and previous histories negative. Some exposure to wet and cold. Paroxysmal dull pain in the right leg for nine years, increasing in severity and duration and followed by wasting. Seven years before, when nursing a child, she noticed that the right breast was smaller and secreted less. For three years wasting of the left cheek with some pain. Pain in the back and limbs for a year. Circumscribed atrophy of the skin, subcutaneous tissue and muscles in the second division of the left fifth nerve. Similar atrophy on the right side, increasing from the trunk downwards. Sensation, motion and electrical reactions normal. Some vasomotor symptoms with coldness and livid pallor of the skin of the lower extremities. The trouble was regarded as neuritis migrans.

5. Pelizaeus. Girl, five and three-quarters. Family and previous histories negative. Injury to head without serious results. Fifteen months before the child began to limp and used the left leg less. For ten months disturbances had been noticed in the skin of the left leg, which gradually increased. The left arm and hand also grew stiff and wasted and stripes were noticed in the skin of the forearm; these stripes were hard and thick and in some places sunken and adherent. The left arm was shorter and smaller and the fingers somewhat contracted. The leg was also wasted and there was some contracture; some of the muscles in the leg were harder and firmer. Changes were noticed in the skin of the leg similar to those in the arm, and there was also some brownish pigmentation. There were no changes in the sensibility or the electrical reactions.

6. Torday. Boy, thirteen. At the age of six right hand became swollen and there was noticed a strip of skin about two fingers in width along the whole right arm which was elevated, paler and harder. There was no pain, but the fingers became thinner and were somewhat flexed. Three years later the right half of the face began to atrophy and for six months there had been noticeable atrophy of the right half of the body. The face showed much hemiatrophy, most marked in the upper lip, the ala nasi, the tongue and the gums. There was atrophy of the right side of the neck and shoulder, the right thorax was flatter and the ribs wider apart. The skin was somewhat darker and the veins visible. The right forearm was 2 to 3 cm. smaller, the hand wasted, the fingers less movable, and the skin very thin, harder and less elastic. On the forearm could be seen some shiny, thickened stripes, transversely wrinkled. The right pelvis was a trifle smaller, the right leg a centimeter shorter and somewhat smaller. The gait was normal, but he had little use of the right arm. There was hemiatrophy of the penis, most noticeable in the glans. There was no reaction of degeneration.

In addition to these six cases I have found two more where the atrophy was partial, but which have been only very briefly reported. The first is cited by Oppenheim, a case of facial hemiatrophy with circumscribed wasting of the soft parts and bones over the back, and hemiatrophy and simple muscular atrophy, without weakness or electrical changes, in the whole right leg. The second case is reported by Osler, of a boy of fifteen, who had a progressive disability of the left arm with wasting of the arm. The scapula and right hand were smaller, the bones were smaller, and the arm was an inch shorter. The skin was sclerosed, hide-bound and pigmented.

Oppenheim also refers to certain cases published by Raymond and Sicard in the *Revue Neurologique* for 1902 (x, 593), of progressive wasting of the arm or leg. Two of these cases were brother and sister. The skin was somewhat wasted, but Dr. Sicard informs me that the skin was smooth in aspect, with a very limited atrophy and not a real scleroderma.

Muscular wasting is a more or less frequent accompaniment of scleroderma. Lewin and Heller, in an analysis of 508 cases, have found it present in only 26; but Hutchinson asserts that it is rarely absent, and Thibierge claims that there is always a certain degree of atrophy except in the mild cases and in those developing in later life. This atrophy he regards as due in part to the enforced inactivity of the limbs and in part to the compression of the vessels and nerves leading to the muscles beneath the sclerodermic area. Méry and Jarisch have found that the sclerotic process may actually invade the muscle itself. The bones may also show some degree of atrophy. This atrophy of muscle and bone is usually most marked in the cases of circumscribed scleroderma, and the compression may be so great in sclerodactylia as to lead to the actual loss of one or more fingers. Much more rarely, however, there may be a primary atrophy of the muscles and bones, independent of any compression and even in parts where the skin is still unaffected (Jarisch, Robert, Thibierge).

In the case just reported, as well as in the cases of Takács, Lunz and Torday, the hypothesis of an atrophy from disuse or from compression seems hardly tenable. In my own case there were no noticeable changes in the skin of the arm, and the skin of the leg, although much wasted, had none of the "hide-bound" character capable of serious compression of the underlying parts. The curious atrophy of the chest wall, apparently very similar to that depicted in Henschen's case, extended beyond the sclerodermic area. The atrophy must, therefore, be regarded as in the main primary.

The cases of facial hemiatrophy present certain conditions analogous to those of general hemiatrophy. All the cases of general hemiatrophy, by the way, except my own and that of Pelizaeus, presented a well-marked facial hemiatrophy, although in Lunz's case the facial hemiatrophy was on the side opposite to the atrophy of the limbs (hemiatrophia cruciata). Volhard's case, although not one of hemiatrophy, is unique. This patient had a left facial hemiatrophy with a peculiar bronzing of the skin over the body in the left upper and right lower quadrants. From the fact that facial hemiatrophy is usually limited to the region supplied by the trigeminal nerve, that it is sometimes accompanied by other symptoms (pain, spasm of the masseters, etc.) indicative of disturbances of the nerve, and still more from the results of autopsy (Mendel[1]), which have shown lesions of the fifth nerve, the majority of neurologists have been disposed to regard it as a nervous affection, and many of the works on neurology class it among the diseases of the trigeminal nerve. The majority of dermatologists, however, are disposed to regard facial hemiatrophy merely as a special localization of circumscribed scleroderma, which not infrequently manifests itself in some special nerve area or possibly in the area of some of the spinal metameres, an opinion which is endorsed by a few neurologists (Cassirer, Collins, Möbius). The most extreme case of facial hemiatrophy I have ever seen — more extreme by far than any depicted in the textbooks — is said to have begun with a patch of morphea on the cheek. Another case seen in its early stages showed merely a band of atrophy, involving the bone, about 4 cm. in width and extending on the left side of the forehead from the root of the nose to within an inch or two of the vertex. This began as a white spot, and the skin in that region was white, with red disk spots and sclerotic. There was some general wasting of the left face apart from the sclerotic area. A considerable number of reported cases of facial hemiatrophy have shown evidences of scleroderma on other parts of the body.

The atrophy, moreover, is not confined to the distribution of the trigeminal nerve. Setting aside the cases of bilateral facial atrophy, a few cases have presented atrophy in other parts of the body. Mendel's case had atrophy of the muscles supplied by the radial nerve on the same side, with degeneration of that nerve. In Debray's and Osler's cases the atrophy had involved the deltoid. I have not searched the literature of facial hemiatrophy to find further cases, but these with the five cases of general hemiatrophy and the two of partial atrophy where the face was also involved are sufficient to establish the fact.

A complete explanation of the hemiatrophy of scleroderma as well as of the circumscribed atrophies, whether of the face or of the body, that occur in this disease must wait until we acquire further knowledge as to the nature of scleroderma itself. Of the various hypotheses as to the nature of the disease, — the thyreoid, the infectious, the vascular and the neurotic, — the latter is perhaps the most probable, but whether, if it be a nervous affection, the disturbance be a gliosis, a lesion of the sympathetic, or an angiotrophoneurosis is a matter not yet removed from the unsatisfactory domain of speculative pathology. The lesions in the anterior horn found by Steven in the only case of sclerodermic hemiatrophy that has come to autopsy were not pronounced and may have been secondary, as Cassirer suggests, while the normal electrical reactions noted in most of the cases show that the changes in the anterior horn if constant, cannot be very marked.

[1] Homén's case, often cited as a case of facial hemiatrophy with autopsy, is rejected by Möbius.

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[1] No attempt has been made to compile a complete bibliography of scleroderma or facial hemiatrophy. A full bibliography of scleroderma may be found in the works of Cassirer and Lewin and Heller. I have tried to collect all the cases of general hemiatrophy in scleroderma.

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## THE TOWNS-LAMBERT TREATMENT FOR MORPHINISM AND ALCOHOLISM.

BY RICHARD C. CABOT, M.D., BOSTON.

My attention was first called to this treatment two years ago through talks with Dr. Alexander Lambert and Mr. Charles B. Towns, of New York.

I then went to New York and spent several days in Mr. Towns' private hospital, watching the progress of alcoholic and morphine cases at different times of the day and in different stages of their treatment. I was struck at once by the small amount of suffering undergone by these patients as compared with the much severer suffering with which I had been previously familiar in watching the results of withdrawing morphine either suddenly or gradually.

During this visit in New York I also watched the progress of a group of cases under the care of Dr. Alexander Lambert in Bellevue Hospital, and talked the matter out very thoroughly with him. I became convinced at that time that the immediate results of the treatment were remarkable and that its capacity to get a person free from all desire for morphine and alcohol with a comparatively small amount of discomfort made it valuable.

Soon after this visit I sent to the Charles B. Towns Hospital in New York a patient who had been taking morphine for about twenty years. This patient had at times taken as much as 20 gr. of morphine a day, and was just then taking 11 gr. a day. The habit had been previously broken four times, but the desire had not been abolished and the habit had always recurred after a short period. Under the Towns-Lambert treatment this patient was entirely free from the habit and from all desire for morphine in less than ten days. This was eighteen months ago, and there has been no recurrence nor any approach to a recurrence in that time. The patient has been well and happy and is now very actively employed. In this case the discomfort lasted only three days at the beginning of the treatment. At no time was this patient (nor any other whom I have watched) in any danger.

No one who has had any experience with the attempt to break the morphine habit could help being impressed by a case like this, but there still remained in my mind two unanswered questions: (1) Is it possible to accomplish results like this in any considerable proportion of all cases? and (2) How far was the cure just narrated the result of the powerful personality of Mr. Charles B. Towns?

We all know that the psychical element is a considerable one in the treatment of all drug habits, and especially of alcoholism, though most of us, I think, believe that its influence is not very durable in the treatment of confirmed morphinists. Any one who knows Mr. Towns knows one of the most persuasive and dominating personalities in the world, and though I knew that Mr. Towns spent but little time with patients, I was anxious to find out whether the treatment could be carried out with equal success by any one else.

I was much interested, accordingly, in the establishment in November, 1910, of a hospital near Boston in which the same treatment is carried out under physicians who had been trained in the Towns Hospital, in New York. Any physician sending a patient to this hospital is invited to visit his patient frequently and to watch the treatment in all stages and in detail. Nothing whatever about it is secret. Although only six months have passed since the establishment of this institution, I have already seen results sufficient to confirm me in the belief that, aside from suggestion and any notable psychical impression, the treatment has great value, especially in the cure of the morphine habit, and that just as good results can be obtained here as in New York.

The great chance for moral influence over these patients is, I am convinced, after medicinal treatment has achieved an elimination of the craving for the drug. Before that one may waste his time and talk in vain.

Among the twenty-two cases of which I have records of treatment and of the after results, there are ten cases of morphinism, but one of which has relapsed. I prefer to speak at present only of these cases, details of which are given below. In our alcoholics there have been several relapses. Some we have not been able definitely to follow, but several cases have responded to the treatment with marked success. In regard to the value of the treatment in alcoholism, therefore, I have from my own observation as yet no definite opinion, though I feel much interested in it and shall carefully watch results.

Among our morphine cases, the longest period of freedom from symptoms or desire for the drug has been eighteen months (in the case mentioned above). There is also one of four and a half months, three of three and a half months, one of three months, two of two months, and two of one month. The results in these cases are the freedom from any desire for the drug and abstinence from its use.

Of course no one can say that these patients will never return to it, and no one asserts that the treatment gives the patient a new brain and nervous system or fundamentally changes the character which he possessed before he took up the habit.

I see no reason to believe that it is worth while to advise the treatment in cases where the essential diagnosis is *degeneracy*, with morphinism

merely as one symptom of that condition. But when the morphinism is the only sign of degeneracy, or when the patient has no characteristics that would tempt us to use this term at all, there seems to me to be great value in the treatment as compared with any other with which I am acquainted. Perhaps the majority of those who take morphine may be classed as degenerate, but there remains a large number of physicians, happily married women and others who have strong positive interests in life and who have acquired the habit for reasons of a relatively accidental nature under special stress and strain or because of the administration of morphine by a physician. In these cases I believe a considerable percentage of good results will be obtained.

I have here attempted no account of the details of the treatment, since these have been fully given by Dr. Alexander Lambert in the *Journal of the American Medical Association* for Sept. 25, 1909, and Feb. 18, 1911.

Some details regarding the cases of morphine habit are appended herewith.

Case 1. Mrs. O., forty-six years old, had taken morphine "all her life" for menstrual pain and nervous indigestion. At time of entrance was taking 11 gr. a day. Has often taken 20 gr. Treatment (two weeks) in November, 1909; subsequent hysterectomy. No recurrence; excellent health up to April 26, 1911.

Case 2. Mr. P., aged sixty, sent by Dr. Kingsbury, of Needham. Has taken 1 to 3 gr. daily for twelve years. In hospital Dec. 1 to 7, 1910. No recurrence to date (April 26).

Case 3. Mrs. X., thirty-eight years old, has taken 6 to 10 gr. of morphine a day for two years on account of headache. In hospital Dec. 29, 1910, to Jan. 11, 1911. A month later reports that she has not felt so well for many years. Is enthusiastic over results of treatment. Is hard at work and happy; no recurrence to April 26.

Case 4. Dr. S., aged thirty-five, sent by Dr. J. G. Mumford. Has taken morphine for eight years; present dose 5½ gr. hypodermically. In hospital Dec. 29, 1910, to Jan. 15, 1911. Seen three weeks after discharge, feeling better than for a long time. No desire for morphine. Anxious to tell others about the treatment. No recurrence to April 26.

Case 5. Dr. B., aged thirty-seven, has taken morphine four years, averaging 3 gr. a day hypodermically, for the pains of tabes dorsalis. In hospital Dec. 31, 1910, to Jan. 14, 1911. Heard from March 15; well, no desire for morphine, no recurrence.

Case 6. Mrs. O., sent by Dr. Alman Cooper, of Brookline, aged thirty-seven. Had taken morphine for fifteen months on account of menstrual pain. Entered Jan. 7, 1911; stayed three weeks. Heard from April 15; in excellent condition, no desire for morphine.

Case 7. Miss D., aged thirty-five years. Entered Feb. 6, 1911. Had taken morphine for asthmatic attacks (3 or 4 gr. a day) for three years. Seen April 15, feeling finely; no recurrence, no desire for morphine.

Case 8. Miss S., aged twenty-one. Entered Feb. 11, 1911, stayed ten days. She has taken morphine for five years intermittently, averaging perhaps 2 gr. a day. Her statements are very unreliable, but apparently there has been a recurrence since.

Case 9. Mrs. W., aged thirty-nine. Entered hospital Feb. 22, 1911. Has taken 16 to 25 gr. of morphine a day for nine years. April 15 was in good condition; no recurrence.

Case 10. Mr. B., aged forty. Has taken morphine for eight years. Present dose 27 gr. a day; has taken as much as 40 gr. a day. Entered March 12, stayed two weeks. Up to April 26, no recurrence, good condition, no desire for morphine.

I do not use the word "cure" in relation to any of these cases. A much longer period must elapse before any one can be justified in using such a term. All that is here shown is a rapid and comparatively easy arrest of the malady, putting the patient into a good position to begin that reconstruction of his plan of life which is usually necessary.

## A REVIEW OF 214 CASES OF EXTRA-UTERINE PREGNANCY AT THE MASSACHUSETTS GENERAL HOSPITAL.

BY WM. PEARCE COUES, M.D., BOSTON.

Since Tait, in 1883, performed the first operation for extra-uterine pregnancy with the idea of checking hemorrhage, and Janvrin in this country first made the positive diagnosis of unruptured extra-uterine pregnancy in 1886, such a decrease has been brought about by surgery in the mortality of this formerly often fatal calamity as would hardly be believed by those who only lived to see the beginnings of this work. It perhaps brings this home more when we consider that a woman now afflicted with ruptured extra-uterine pregnancy and operated upon has, other things being equal, a four or five times better chance for life than if she had pneumonia.

Shall we operate during the initial shock, or shall we not? That is the question which is the most important consideration in these cases. Symposiums on the subject of late years do not seem to have settled the question.

It is the practice of some surgeons to stimulate their patients and wait for reaction from shock. Others wait without stimulation, and others operate immediately during shock. It is hoped that the following findings upon this and other subjects connected with extra-uterine pregnancy may prove of interest.

I thank the surgeons of the Massachusetts General Hospital through whose kindness I have been allowed to study and report a long series of cases.

*Menstruation.* (*214 cases.*) — One hundred and fifty-nine, or 74.2%, had irregular flowing as a symptom of onset of their extra-uterine pregnancy.

Of these 159, only 15, or 9.4%, had a history of irregular menstruation before the present illness began.

*Age.* — The age was recorded in 183 cases. One hundred and sixty-one, or 87.4%, were twenty-five years or over; 22, or 12.02%, were under twenty-five years; 1, or .54%, was below twenty years, and 7, or 3.8%, were forty years or over.

The greatest number of pregnancies occurred at thirty-two years, viz., 18.

The next greatest number occurred at twenty-eight years, viz., 17. The youngest, 1 case, occurred at

nineteen years, .54%; the oldest, 2 cases at forty-five years, 1.08%.

Sixteen and three tenths per cent of all the pregnancies were at twenty-eight and thirty-two years.

*Number of the pregnancy.* — One hundred and seventy-seven cases with record of this fact.

The greatest number of extra-uterine pregnancies occurred in the second pregnancy, 25.4%; next in the third pregnancy, 24.2%; next in the first pregnancy, 20.9%.

The extra-uterine pregnancy was the first, second, third or fourth pregnancy in 84% of the cases.

*Time after last pregnancy.* (*89 cases.*) — In 32 cases, or about one third, it was under three years since the last pregnancy.

In 16.7% of all the 89 cases it was under one year since the last pregnancy.

In 24.5% of all cases it was under two years since the last pregnancy.

In 35.6% it was under three years since the last pregnancy.

In 58.4% it was under five years since the last pregnancy.

In 6, or 2.8% of the whole 214 cases, it was the second extra-uterine pregnancy.

*Miscarriages.* — One hundred and eighty-five cases with accurate data.

In 61, or 33%, a history of previous miscarriage was recorded.

In 36, or 19.3%, the last uterine pregnancy ended in a miscarriage (about one fifth of the cases).

*Syncope.* — Fifty-six, or 26.1% of 214 cases, had syncope or fainting attacks.

Nine, or 4.6%, had repeated attacks (from two to five attacks).

*Pain.* (*207 cases.*) — *Character of the pain:* Some of the expressions used in describing the initial pain were as follows: Very severe, stabbing, excruciating, cramps, terrible, sharp, intense, shooting, griping, sudden, agonizing and cramp-like. Tenesmus and rectal pain on bowel movement were occasionally noted.

*Data concerning pain:* One hundred and thirty-nine, or 66.1%, had severe abdominal pain recorded.

In 14, or 6.7%, the pain was dull in character.

In only 55, or 26.5%, the onset of the pain was sudden.

Other data thereupon will be found in the table.

Of interest in this connection was Case No. 49.

This patient had dull pain, not localized; general peritonitis was found at autopsy.

*Physical examination at the time of entering the hospital.* (*214 cases.*) — A mass was palpable in 45% of all cases.

In 49 cases the mass was palpable by abdomen as well as vagina.

In 81 cases a mass was palpable by vagina when none was recorded by abdominal examination.

*Vaginal examination.* (*Made in 203 cases.*) — The result of the vaginal examination appears alone in the table.

*Blood.* — One hundred and ten white counts were made.

Thirty-seven, or 33.6%, had a white count under 10,000; 73, or 66.3%, had a white count of 10,000 or over; 36, or 32.7%, had a white count of 15,000 or over; 31, or 28.1%, had a white count of 16,000 or over.

In 24, or 80%, of the cases in shock there was a marked leucocytosis. In only one case of these with this marked leucocytosis, or 4.1%, was a septic condition discovered at operation; that is, in 95.9% of cases the leucocytosis seemed definitely due to a previous hemorrhage.

The lowest white count was 2,000; the highest white counts were two of 45,000 each; the lowest Hb, 9%; this patient was operated upon and recovered.

*Temperature.* — Ninety-three, or 43.4% of the 214 cases, had a temperature of 100 or over. Thirty-one, or 14.4%, had a temperature of 101 or over.

*Mortality.* — Cases from 1888. Two hundred and ten cases operated upon. Mortality, 7.6%.

Two hundred and two abdominal sections; 8 vaginal punctures; 4 patients — no operation was performed.

Two hundred and two abdominal sections, 16 died, mortality of 7.9%. Eight vaginal punctures, 1 died, mortality of 12½%. Two hundred and fourteen cases, whole number, 17 died, mortality of 7.9%.

In three of the cases that died after operation peritonitis was present at operation.

In one, fatty degeneration of heart and liver, and cystic degeneration of pancreas.

In one, interstitial nephritis. (One of the three had peritonitis present at operation.)

Excluding the three cases of peritonitis found at operation, and the case with degeneration of heart, liver and pancreas, we have a mortality of 5.8% in 206 operated cases since 1888.

*Tubes.* (*202 abdominal sections.*) — In 93, or 46.03%, the right tube was the seat of the pregnancy.

In 90, or 44.5%, the left tube was the seat of the pregnancy.

In 19 cases, or 9.4%, the pregnant tube was not definitely identified or described as right or left in the record.

*Pathological report.* — There were 143 pathological reports. In 76 cases it was possible to differentiate by the report the part of the tube the seat of pregnancy.

Ampulla pregnancy was found in 50, or 65.7%.

Isthmic pregnancy was found in 14, or 19.4%.

In 9, or 11.8%, pregnancy was recorded as in the middle of the tube without stating definitely whether isthmic or ampulla pregnancy could be differentiated.

Interstitial pregnancy in 2, or 2.6%, was recorded.

*Fetus.* — Two hundred and ten cases, all the cases operated upon.

The fetus was found in 51, or 24.2%, of the cases.

The fetus was found in a tube in 15, or 30%, of 51 cases.

It was found in the abdomen in 10, or 20.2% of the 51 cases.

In 26, or 50.5% of all, the record stated that the fetus was found without giving particulars as to the location.

In one case, or .49%, a double extra-uterine pregnancy was found.

Two cases of interstitial pregnancy were recorded. One recovered, 1 died, mortality 50%.

*Disease of tube and ovaries.* (*202 cases.*) — In 34, or 16.7%, the opposite tube was diseased; in 70, or 34.6%, adhesions were found; in 31, or 15.3%, there was a cystic ovary; in 19 the cystic ovary was on the opposite side; in 12 the cystic ovary was on the same side; in 4 both ovaries were cystic — 202 cases.

In 70, adhesions were present; 31 cystic ovaries; in 34 the other tube was diseased; in 34 the last pregnancy ended in miscarriage. One hundred and sixty-nine cases, or 83.6%, had one of these troubles.

*Tubal abortion and ruptured tube.* — One hundred and fifty-two cases with accurate data. In 119, or 78.2%, the tube was ruptured; 26, or 17.1%, were tubal abortions; 7, or 4.6%, were unruptured.

There were three cases of extra-uterine pregnancy at or near full term. All these were operated upon. One eight to nine months, the sac was stitched to the abdomen; recovered. One nine months, placenta removed; recovered. One eight months, sac packed, died, mortality, 33⅓%.

*Hemorrhage at operation.* — Active bleeding was

found going on in 9 cases of the 202 abdominal operations, 4.4% of the cases.

Clotted blood in 104 cases; fresh blood free in abdomen, 79 cases; 183 cases, or 90.4%.

The amount of blood in the abdomen was in some cases described as follows: Very large amount, 1 to 2 quarts, 1½ quarts, completely filled, 1 quart; filled with liquid and clotted blood; three double hands full of clot removed, abdomen full of fresh blood; many quarts; 2 quarts of blood and clots, 1 quart, 2 quarts; pelvis full of blood — 1 quart, pelvis full of blood — wash basin full.

*Shock.* (*210 cases operated upon.*) — Fifty-two, or 24.2%, of the cases were in shock. Immediate operation in shock, 28 cases. Seven died. Mortality, 25%. Delayed operation, 24 cases. Two died. Mortality, 8.3%. (Both of these had peritonitis at time of operation.)

One case died of shock without operation.

*Immediate Operation in Shock.*

I. Aged forty-four. Immediate operation. Marked shock. Interstitial pregnancy, temperature 99.4, pulse 135, respiration 48. Pulse hardly perceptible at wrists, bloody fluid and clots in abdomen, tube ruptured, tear extending from near the end of tube into the cornua of uterus; never recovered from shock, died same day.

II. Aged thirty-two. Immediate operation. Shock. Temperature 100, pulse 140, respiration 37, white blood count 30,000, Hb. 47%; tube ruptured, no fresh blood in abdomen, distended intestine, drained, markedly distended after operation, vomited without effort large amount of dark fluid. Stomach washed out, escape of large amount of gas and dark brown fluid, softening stomach. Died with signs of resolving pneumonia at base. Acute dilatation of stomach.

III. Aged thirty. Immediate operation. Shock. Temperature 100, pulse 150, respiration 20. Tube ruptured, abdomen filled with clots and blood, no other pathological conditions found at operation. Died of shock same day.

IV. Age? Immediate operation. Shock marked. Temperature 100.5, pulse 140. Tube ruptured, great deal of free and clotted blood in abdomen, no other pathological conditions discovered at operation. Died next day, never recovered from original shock.

V. Aged thirty-eight. Immediate operation. Cyanotic; in shock. Temperature 102, pulse 132, white blood count 20,000. Right tube ruptured, markedly distended, clots and bloody fluid in abdomen, intestine distended, drained. Died next day.

VI. Aged forty. Immediate operation. Shock. Temperature 99, pulse 130, respiration 16. Tube ruptured, free blood and large amount of clot in abdomen, no other pathological conditions found at operation, tube found dry — left in. Death caused by hemorrhage from the tube at site of pregnancy. Patient reacted well from operation, when blood pressure returned to nearly normal; it is probable that second hemorrhage took place. Died in three days. Pathological report, — extra-uterine pregnancy, rupture and extensive hemorrhage, small parovarian cyst.

VII. Aged twenty-nine. Immediate operation. Profound shock. Temperature 100.5, pulse 120, respiration 40. Tube ruptured, skin ashen, water and air hunger, dark clotted blood gushed out; no other pathological conditions discovered at operation. Died of shock next day.

*Delayed Operation in Shock.*

VIII. Aged twenty-five. Temperature 101.2, pulse 108, respiration 24; good pulse and color, abdomen negative, excellent appetite, three days after entrance after examination, sharp pain, shock, thirsty and pale. Operation one day after shock came on, tube ruptured, free blood in abdomen, pelvis sloughy; lower abdomen full of rather bright fluid blood. Twenty-eighth, wound reopened, greatly dilated stomach, filling abdomen, general peritonitis. Original focus in right tube.

IX. Aged thirty-four. Temperature 100.4, pulse 108, respiration 20. Waited one day in shock, infused at operation, prostrated. Temperature 105, peritonitis present at operation. Died.

*Cases Operated Upon Not in Shock.*

X. Aged twenty-eight. No shock. Temperature 100.8, pulse 120, operation delayed some hours, tubal abortion, four weeks' illness, large masses of clot free in abdomen, gush of stale blood, peritonitis recorded, failed with distention and vomiting.

XI. Aged thirty-four. Temperature 102, pulse 128, respiration 32. General condition good, umbilical hernia, enormously fat, waited one day, no change in patient's condition during night. Incision opened into a blood cyst, wall of sac covered by peritoneum, mass like ovum size of apple removed; 1 to 2 quarts of blood gushed out. Autopsy showed fatty degeneration of heart and liver, cystic degeneration of pancreas. Extra-uterine pregnancy.

XII. Aged thirty-four. Temperature 99.8, pulse 92, respiration 20. One-fourth per cent albumin in urine, waited one day, no shock, eight months' fetus found, tumor covered by peritoneum, child extracted, sac packed with gauze, pint of blood lost, failed, died in four days. Shock? Record states, "Not enough bleeding to cause death."

XIII. Aged thirty-two. Temperature 100.2, pulse 93, respiration 39. One-tenth per cent albumin in urine, few granular casts. Bowel distended, tympanitic, no shock recorded, operation after two days. Drained, left tube probable rupture; clot quite adherent to intestine, much free blood. Distention steadily increased after operation; died. Sepsis?

XIV. Second extra-uterine pregnancy. No shock. Temperature 96.7, pulse 80, respiration 24. Operation two days after entrance, careful examination of records shows no shock despite temperature. Tubal abortion, great amount of old blood clot in abdomen; adhesions drained, patient got out of bed, then sank, failed from this time. Died. Purulent general peritonitis found at autopsy.

XV. Aged thirty-two. Temperature 98.4, pulse 110. No shock recorded. Operation thirteen days after entrance, tube ruptured at operation, fetus free in pelvis, other tube removed, drained, failed, with distention, nausea, weak pulse. Autopsy showed fibrous peritonitis. Early interstitial nephritis, pulmonary edema, pleural effusion.

XVI. Aged thirty-four. Temperature 99.5, pulse 88, respiration 20. No shock recorded. Italian, poor history, abdomen negative; first operation three days after admission, vaginal puncture, dilating and curetting, old fibrinous clots and fresh clotted blood removed. Drained. After operation, vomited constantly, diarrhea, distended, tender, rigid. Second operation, laparotomy, dark bloody fluid in pelvis, bowel much injected, many light adhesions. Died.

XVII. Not operated upon. Aged thirty-seven. Temperature 100.2, pulse 84, respiration 24. History of irregular menstruation. Sudden very severe pain and collapse one month ago. Entered hospital, in good condition, well-nourished, did not appear sick. Reported for sudden collapse, patient blanched, cold, extreme pain, clammy extremities, lips purple, nose and ears cold, no pulse at wrist. Temperature 96.8;

given stimulation, rallied; later in afternoon no pulse at wrist, vomited everything. Operation not advised. Died.

TABULATED STATISTICS OF EXTRA-UTERINE PREGNANCY.

*Menstruation (214 Cases.)*

Irregular, 74.2%. Irregular before present illness, 9.4%.

*Miscarriages (185 Cases).*

33% previous miscarriage.
19.3% last uterine pregnancy ended in miscarriage.

*Syncope (214 Cases).*

26.1% of all cases; 4.6% repeated attacks.

*Tubes (202 Abdominal Sections).*

46.3% right; 44.5% left; 9.4% not identified.

*Pathological Reports (76 Cases).*

Ampulla pregnancy, 65.7%
Isthmic pregnancy, 19.4%
Interstitial, 2.6%

*Tubal Abortion and Rupture Tube (152 Cases).*

78.2% tube was ruptured.
17.1% tubal abortions.
4.6% unruptured.

*Age (183 Cases).*

87.4% over twenty-five.
12.02% under twenty-five.
3.8%, forty or over.
Youngest, nineteen years.
Oldest, 2 at forty-five years.
Greatest number at thirty-two years, 18.
Next at twenty-eight years, 17.
16.3% at twenty-eight and thirty-two years.

*No. of Pregnancy (177 Cases).*

| | | | | | |
|---|---|---|---|---|---|
| 1st | pregnancy in | 20.9% | 6th | pregnancy in | 4.5% |
| 2d | " " | 25.4% | 7th | " " | 2.8% |
| 3d | " " | 24.2% | 8th | " " | 1.6% |
| 4th | " " | 13.5% | 9th | " " | .56% |
| 5th | " " | 6.2% | | | |

1st, 2d, 3d or 4th in 84% of the cases.

*Shock (210 Cases Operated Upon).*

24.2% in shock.
Immediate operation in shock, 28 cases, 7 died, mortality 25%.
Delayed operation, 24 cases, 2 died, mortality 8.3%.

*Time after Last Pregnancy (89 Cases).*

| | | | | | |
|---|---|---|---|---|---|
| 18 | years, | 1.1%. | 7 | years, | 7.8%. |
| 14 | " | 3.3%. | 6 | " | 6.6%. |
| 13 | " | 1.1%. | 5 | " | 8.9%. |
| 11 | " | 3.3%. | 4 | " | 8.9%. |
| 10 | " | 6.6%. | 3 | " | 6.6%. |
| 9 | " | 6.6%. | 2 | " | 11.2%. |
| 8 | " | 8.9%. | 1 | " | 8.9%. |

Under 1 year, 16.7%.
24.5% under 2 years.
35.6% " 3 "
58.4% " 5 "
2.8% it was second extra-uterine pregnancy.

*Mass (214 Cases).*

Palpable in 45% of all cases.
49 cases palpable by abdomen and vagina.
81 cases palpable by vagina but not by abdomen examination.

*Mortality. (Cases from 1888.)*

210 cases operated on, 7.6% mortality.
202 abdominal sections, 7.9% mortality.
8 vaginal punctures, 12½% mortality.
4, no operation done.
Mortality, 214 cases, 7.9%.

*Hemorrhage at Operation.*

Active hemorrhage at operation, 202 cases, 4.4%.
Fresh blood in abdomen, 79 cases.
Old blood in abdomen, 104 cases.

Cases, 183, or 90.4%.

*Vaginal Examination Made (203 Cases).*

*Cervix.*

15.2% cervix torn. .98% erosion.
17.1% cervix softened. .98% conical.
.49% nodular.

*Uterus.*

13.4% retroverted. .49% anteflexed.
6.8% bound down. 8.8% os patulous.
2.9% anteverted. .49% membrane on os noted

*Blood. (110 White Counts.)*

33.6% under 10,000. 32.7% 15,000 or over.
66.3% 10,000 or over. 28.1% 16,000 or over.

*White Counts in Shock.*

| | |
|---|---|
| 18,000– 7,800–30,000 | 39,600–25,000–45,000 |
| 15,000–11,000–21,000 | 21,000–24,800–18,000 |
| 2,000–19,800–20,000 | 13,000–30,000–32,000 |
| 8,000–23,000–18,400 | 29,000–21,332–19,100 |
| 5,000–24,000–30,000 | 45,000–28,000–25,000 |

*Pain (207 Cases).*

66.1% severe abdominal.
6.7% dull.
1.4% none.
14.4% left side.
19.3% right side.
27.03% iliac and inguinal regions.
6.7% back.
4.8% epigastrium.
2.4% like labor.
.96% around umbilicus.
1.92% shoulder and chest.
2.9% ovarian region.
1.4% rectum.
18.3% general abdomen.
21.2% lower abdomen and pelvis.
26.5% sudden.
.96% in uterus.

*Temperature (214 Cases).*

43.4% 100 or over.
14.4% 101 or over.

*Fetus (210 Cases).*

Found in 24.2%.
In tube in 30% of 51 cases.
In abdomen in 20.2%.

*Diseases of Tubes and Ovaries (202 Cases).*

16.7% opposite tube diseased.
34.6% adhesions found.
15.3% cystic ovary.
19 cystic ovary opposite side.
12 cystic ovary same side.
4 both ovaries cystic.

CONCLUSIONS.

1. Irregular flowing seems to play the important part given it in the books as a symptom of extra-uterine pregnancy.

2. The importance of a long period of sterility as a cause of extra-uterine pregnancy does not seem to be borne out by these statistics.

3. Conditions possibly leading to extra-uterine

pregnancy: The fact that cystic ovaries, disease of the opposite tube, adhesions or a previous miscarriage occurred in over 83% of 202 cases is suggestive, and is in agreement with authorities as to the possible relation of such conditions to extra-uterine pregnancy.

4. The fact that in only 26.5% of 207 cases the pain was sudden is of interest. In about three fourths of the cases the sudden, severe pain was preceded by pain of less severity, coming on gradually.

5. Of considerable interest is the leucocytosis observed in the cases in shock. This is apparently a perfect example of leucocytosis after hemorrhage. The finding of a temperature of 100 or over in 43.4% of the cases, and of a temperature of 101 or over in 14.4% of cases, is also of interest. Ordinarily it is supposed these cases rarely have any fever.

6. Active hemorrhage at operation. Some observers with much experience in this subject say that active hemorrhage actually seen at operation occurs so rarely as to be practically negligible. It occurred in 4.4% of all the cases operated on. It is possible that the hemorrhage was in some cases started up by operative manipulation.

7. Immediate *vs.* delayed operation. It is with misgivings that one approaches any definite conclusions in regard to this subject. Many operators of great experience differ about the best procedure. I must conclude that they are not greatly influenced by statistics and that in this condition every case must be judged on its own merits. These statistics show that it is best to wait for a time before operating on the cases in shock. Twenty-five per cent mortality of those operated on in shock, 8.3% mortality of those for whom the operation was delayed for a time. Active stimulation and blood-pressure-raising drugs seem to be best given after the bleeding points in the tube are secured. Rest and morphia while waiting are most important. Waiting any length of time with a case of extra-uterine pregnancy in good condition is dangerous, since it has been shown that bleeding may recur at any time, so that in a few hours the patient may be again in a desperate condition.

## Clinical Department.

### TWO CASES OF ABDOMINAL PREGNANCY, ONE AT TERM.*

BY EDWARD REYNOLDS, M.D., BOSTON.

Private Case Records 2382. Seen March 6, 1905, with Dr. Lawrence, of Malden, who had himself been called in consultation by her physician a few hours earlier. She was thirty years old and supposed to be within a few days of term in her second pregnancy. She had had "fainting spells" early in this pregnancy, had had pain and flowing, and had been curetted, little material obtained. Between that time and the time I saw her she had had four sharp collapses, treated by rest in bed. The last and most severe collapse occurred on March 4, two days before my visit. She was said to have gradually improved during that time, but had a feeble pulse of 140, was blanched and looked as though it were very questionable whether she would survive. The abdomen was very prominent, with marked frog belly, and a tumor easily outlined by the eye in the lower abdomen, lying with its long diameter transverse and extending from the pubes to about three inches above the umbilicus. The abdominal wall was very thin and, of course, very flaccid. The outlines of the distended intestinal coils were visible to the eye in the upper abdomen, while in the lower and more prominent portion the outline of a child was distinctly suggested by inspection. The upper abdomen was tympanitic, the lower flat. The fetal members of a large child were distinctly perceptible to the touch, apparently immediately beneath the thin abdominal wall, and following the visible outlines. No fetal heart was heard, but the so-called placental soufflé was loud immediately above the pubes and over the lower half of the space occupied by the child. No active movement of the fetus could be provoked even on free passive movements of its limbs. On vaginal examination the cervix was patulous, admitting the finger readily, and apparently well into the body of a slightly enlarged uterus with velvety mucous membrane. Diagnosis, abdominal pregnancy with child probably recently dead. The condition of the patient entirely precluded any thought of immediate operation. The shock of even a slight operation would undoubtedly have proved fatal. Even had this not been so, I think that it would have been wise to wait ten days or a fortnight for the subsidence of the placental circulation. She reacted very slowly from her collapse and was not thought to be in condition for removal to the hospital, or for operation, until March 22d, more than two weeks after I saw her. She was then sent in and I operated on the 24th. Her pulse was then between 110 and 120, and of fair strength. Temperature normal, color very pale, but condition on the whole fairly good under the circumstances.

A small exploratory incision was made in the median line just below the umbilicus, or at about the middle of the gestation tumor, in order to permit its enlargement upwards or downwards as the conditions might suggest. The great omentum presented, its vessels greatly engorged and its whole substance of a brilliant green color, resembling that of meconium. There were no adhesions between the surface of the omentum and the anterior wall, but its edge was firmly adherent around the whole circumference of the brim of the pelvis, completely covering in the gestation tumor, and walling it off from the upper cavity of the abdomen. The wound was enlarged downward almost to the pubes and the upper abdomen walled off by gauze placed between the abdominal wall and the omentum just above the upper end of the incision. The edge of the omentum was so firmly adherent that it could not easily have been separated from the pelvic brim, but it was very easily split with the fingers in the median line of the abdomen, disclosing the fetal surface of the placenta, which was subsequently found to have been attached to the intestines behind it, but had been centrally separated from them by an enormous mass of blood clot which had dissected the placenta free almost to its edges, bulging it upward into the abdomen above the child, which had evidently been displaced downwards thereby. The placenta was gray and friable. It was easily torn through, was separated without especial difficulty along its edges, practically by tearing its substance along the edge, and was removed with the greater part of the blood clot. The fetus followed, large and in an advanced stage of aseptic

* Read before the Obstetrical Society of Boston, Oct. 25, 1910.

decomposition. The cavity of the pelvis was still filled with old blood clot so thoroughly organized and so intimately adherent to the uterus and coils of the intestine that it was thought unwise to attempt to remove it. The cavity which had been occupied by the fetus and placenta was now packed with gauze, which was brought out through the wounds in the omentum and abdominal wall. The field of operation was thoroughly cleaned, the gauze packing in front of the omentum which walled off the upper abdomen was removed and replaced by clean gauze, and this was brought out through the upper end of the abdominal wound. Fifteen large strips were used in these two packings and the entire wound was thus filled with gauze, no suture being attempted. Like most surgeons nowadays, I am far from fond of open wounds or gauze, but the conditions in this case seemed to preclude any other method.

The patient was put back to bed in very fair condition, and rallied well from the primary shock. She was, however, in very feeble condition for several days, requiring constant stimulation, including repeated salt solution under the breast. On the third day she was distinctly reacting, and from that time did well. The gauze in the gestation sac was removed strip by strip at intervals, as the patient's strength permitted, the last six pieces being removed together under nitrous oxide on the tenth day. The remaining gauze, that which walled off the general cavity, was by this time extremely adherent and was removed very slowly, though pulled at daily, the last being extracted about six weeks after operation. It may be that it would have been wiser to have removed this gauze earlier, but during the first two weeks after operation each removal of gauze was followed by so much prostration that it was necessary to proceed with great caution and the discharge from the gestation sac was so profuse and foul that I was unwilling to risk an early removal of the upper gauze.

The patient was able to go to the western part of the state about ten weeks after operation, and then did uninterruptedly well, writing to me at intervals for a year or more to assure me of her entire health.

Private Case Records 2708. Seen by me March 15, 1907, with Dr. W. J. Macdonald, of Chelsea; thirty-six years old. Married twenty-one years. Two children eighteen and nineteen years old. One miscarriage two years before this date. Catamenia regular in June, 1906; none in July. August catamenia profuse, requiring packing, supposed to have miscarried. Catamenia regular in September and October. None in November. Dribbled from Dec. 15 to about Jan. 15, when she had an attack of moderate abdominal pain lasting some hours, such attacks occurring about once a week during the next month, when one of them was followed by a "faint"; since then weekly attacks of pain but without fainting.

On examination, the lower abdomen was occupied by a soft mass of irregular outline, extending nearly to the umbilicus and crowding the vaginal vault downward. I thought that I could make out a uterus of about normal size lying below and in front of it. Diagnosis, "Question between a soft neoplasm, or an extra-uterine, with inflammatory disease a bad third."

On paper the diagnosis of advanced extra-uterine would seem plain, but every surgeon knows the difficulties inherent in this diagnosis in the absence of perceptible fetal members, and I make no apologies for the state of doubt shown by the above entry in my records.

She had been in bed many weeks and was in poor but by no means inoperable condition. She entered my private hospital and on March 18 I opened her abdomen. A blood clot was seen immediately beneath the abdominal incision and there was a considerable amount of free blood and clots in the lower portion of the abdominal cavity. On removing this a tumor presented. It was covered by peritoneum and looked not unlike the wall of a distended uterus. Its upper portion was covered by coils of adherent small intestine, which on closer examination proved to be connected with the tumor by a gray necrotic-looking exudate nearly half an inch thick.

The general cavity was walled off with gauze, and the fingers were readily passed through the necrotic tissue below the intestine, separating them from the tumor, which was now seen to be evidently the gestation sac of an abdominal pregnancy. It was opened by tearing, the cord presenting immediately through the rip. With this as a guide a fetus about ten inches long and lying amid broken-down clots was easily found and removed. The placenta was adherent to the bottom and right side of the pelvis and to the entire mesentery of the small intestine. It seemed very firmly attached and there was so much necrotic material visible that further trauma seemed unwise, more especially as there was already fairly free oozing from the bottom of the cavity. The cord was cut off close to the placenta and the gestation cavity packed with seven strips of gauze, hemorrhage being apparently well controlled. The toilet of the peritoneum was made, the walling-off gauze above the gestation sac was removed and replaced by fresh gauze. Three provisional sutures were inserted in the abdominal wall. Patient removed from table in fair condition.

The history of this case suggested that pregnancy had persisted for nine months. The size of the child was that of a six months' fetus. I am unable to offer any opinion of value upon whether it had been carried in the abdomen for some months after its death, or whether the history was misleading as to the length of pregnancy.

During the first two days the pulse ranged from 130 to 150, the wound oozed very freely, the patient became extremely thirsty and vomiting was persistent. Small quantities of salt solution were given by the rectum, stypticin was used without effect. On the third day the oozing was distinctly decreasing, but thirst and vomiting were distressing and salt solution was used more freely. From this time on she steadily gained in condition, the first gauze was removed on the fifth day, and the last gauze from the gestation sac was removed on the eighth under nitrous oxide. The gestation sac was irrigated daily with sterile water. The remaining walling-off gauze was pulled upon daily, and the last piece was removed on the twentieth day. Placental tissue, membranes and organized blood clot were washed out in small fragments daily.

On the forty-fourth day a piece of placenta two inches long and an inch wide floated out of the wound during irrigation. This was followed by a single temperature of 102, the next temperature being normal. The patient went home at the end of seven weeks. A sinus persisted for about four weeks later, when it closed spontaneously. She was seen several times during the next year, always in excellent condition.

Both these cases were seen after the death of the fetus, and both were operated upon after necrosis of the placenta was well established; they consequently illustrate only one phase of this subject. Both were operated upon by the same method, i. e., walling off the general cavity, opening of the gestation sac by careful dissection with the fingers, removal of the fetus and of such portion of the secundines as could be readily

separated, and packing of the gestation sac with gauze.

I think that the keynote to success in such cases rests in selecting for the time of operation a date long enough after the death of the fetus to permit the practical cessation of the utero-placental circulation, but before the patient begins to show the cachexia which must necessarily attend the absorption of so large an amount of necrotic material. I would place it in the second or third week after the death of the fetus, the choice within these limits being determined by the progress of the patient's condition.

I think further that the essential technical points are a wide incision, thorough walling off of the general cavity if this has not already been effected by nature, great care in ascertaining the position of the intestines before the gestation sac is torn into, and avoidance of any attempts at forcible removal of the placenta. It is fortunately possible to take plenty of time to study out the relations between the gestation sac and the intestine, as the rest of the operation occupies almost no time at all, and any reasonable amount of time so spent is most wisely used.

## REPORT OF A CASE OF FULL-TERM INTRA-ABDOMINAL PREGNANCY.

BY JOHN W. LANE, M.D., BOSTON,
*Third Assistant Visiting Surgeon, Boston City Hospital.*

Patient, Mrs. M. H., thirty years.

*Past history.* — Married seven years ago; five years ago had a miscarriage at four and one-half months induced by a fall down stairs. Past history otherwise negative, patient always having been well up to the beginning of the present pregnancy.

*Present history.* — Sometime in March, 1910, patient began to have morning vomiting and nausea, which soon became almost pernicious in character and occurred almost any time through the day. This excessive vomiting, which persisted during the early months of pregnancy, was the cause of marked loss of strength in the patient and entailed also a drop in weight from 175 to 125 lb. The pregnancy ran in about the following fashion: During the whole period there was very obstinate constipation relieved only by 30–40 gr. of cascara or by compound enemata. In June and July there were weekly attacks of very sharp abdominal pain in the left side below the kidney. These attacks required ¼–½ gr. of morphia subcutaneously for relief. In the latter part of July, fetal movements were felt by the mother, and from that time were the cause of much suffering to her.

From March to the middle of June there was almost constant metrorrhagia. Then without any noticeable symptoms, the flowing ceased and did not recur. During the last month of the pregnancy the patient complained of frequent and somewhat painful micturition. There was evidence of a slight degree of cystitis. There was a slight trace of albumin in the urine. There was no headache. The patient at times was slightly disturbed mentally, being childish in action and irrational in speech.

On Nov. 4, 1910, sharp pains in the back simulating labor pains began and recurred at ten-minute intervals. These pains were associated with marked rigidity of the anterior muscles and pain over the pubes and sacrum.

Examination at this time by her physician, Dr. Thomas J. Coyne, of Roxbury, to whom I am indebted for the privilege of operating upon this patient and reporting the case, showed the abdomen uniformly enlarged and the fetal parts palpable, the breech being high and to the left. Fetal heart 144, audible at a point 1½ inches above and 1 inch to the left of the umbilicus. Vaginal examination showed a large boggy tumor filling the posterior cul-de-sac. The cervix was slightly soft, not dilated, and pointed to the os pubis, lying directly behind it.

On account of the debilitated condition of the patient it was suggested to her by Dr. Coyne that a rapid Cæsarean section would give her and the baby a better chance than a prolonged labor. The patient and her husband readily assented and the operation was performed at 9.20 P.M. It can honestly be stated that no suspicion of the condition found had been entertained.

*Operation.* — Median incision about 8 inches carried to the left of the umbilicus. The tissues in the linea alba were boggy and edematous, rather "porky" in appearance. As progress to the peritoneum was being made it was opened in the region just below the umbilicus and immediately there was a gush of dark coffee-colored fluid. The wound was rapidly enlarged in either direction and at once the free breech presented in the wound, the back of the fetus pointing to the mother's left side. The baby was pulled through the wound and delivered. The cord was clamped and cut. Immediately on delivery of the baby there ensued from the abdomen a most frightful hemorrhage. Rapid search for the placenta showed it to be situated in a large saccular cavity in the left lumbar fossa anterior to the kidney, and there was very free bleeding, the placenta having apparently been partially detached on delivery of the baby.

The placenta was separated from its site with great difficulty, being very adherent, and the sac packed full of gauze to control hemorrhage temporarily. The uterus was now sought for and found to be apparently normal save for its being enlarged to the size of a 2½ months' pregnancy. Inspection showed the tubes and ovaries apparently normal in appearance. No trace of rupture of tube, uterus or ovary was visible. The sac was now pulled out of the wound as far as possible and found to be adherent to the anterior abdominal wall in front, the great omentum above and to the descending mesocolon.

The packing was now rapidly removed and four large sinuses in the placental site, which was at the descending mesocolon, were clamped and tied. Attempts at further ligation were now stopped on account of the patient's condition, which had become alarming. The sac was packed with gauze and the abdominal wound closed with through-and-through silkworm gut sutures, with a drain just below the umbilicus. Patient was actively stimulated with strychnia and salt solution and adrenalin 1-50,000 under the breast and continuous saline by rectum.

Artificial respiration was necessary for the baby, also mouth-to-mouth insufflation, and in twenty minutes the baby was crying lustily. It was a boy about 8½ months. Twenty-four hours after delivery the baby having become cyanosed died suddenly.

Nov. 7, 1910: Under ether the packing was removed. On removal there escaped a large amount of dark blood. At midnight of the same day the patient's condition again became critical. The pulse was 140, respiration 50; there was marked pallor and air hunger. With the husband acting as the donor, an arterial transfusion was done, the blood being allowed to run for twenty-five minutes, at the end of which time the

patient's color was markedly improved and the husband began to sigh deeply.

After the transfusion the pulse dropped to 108 and her condition showed marked improvement. After this the patient did fairly well until Nov. 14, when she complained of abdominal pain and tenderness and ran a temperature of 102.5. Examination showed the lower abdomen distended, tender and indurated. Ether was given and the lower angle of the wound opened and about a quart of bloody pus evacuated.

On Nov. 19 she began to complain of very severe rectal pain, spasmodic in character, associated with a constant desire to stool. A compound enema gave no relief from the pain, although there was some fecal matter removed. Rectal examination showed a very large mass of inspissated fecal matter extending as high as could be reached. This was broken up and enemata gave results with complete relief. From this time on convalescence was rapid and patient left the Boothby Hospital on Nov. 23, in good condition save for a discharging sinus at the lower angle of the wound.

There are certain features connected with this very unusual case which are deserving of comment. In the first place, if we exclude rupture of the tube, uterus or ovary by the macroscopic appearance we have a case of true intra-abdominal pregnancy, a condition which Whitridge Williams, of Johns Hopkins University, says has probably never authentically existed.

Personally I feel that in the absence of any adhesion of the sac in which the fetus developed to the uterus, tube or ovary there is proof exclusive that no rupture of them occurred and that impregnation began and finished in the abdominal cavity. I maintain that if this pregnancy had been either tubal, ovarian or uterine primarily and terminated as in this case there would in all likelihood have been some attachment of the sac to some of these organs. In this particular case no such condition existed. Another point of interest which arises is in regard to the treatment of the sac and placenta. Most writers in speaking of this condition state that the sac should be sutured to the wound and the placenta allowed to remain and slough gradually. The obvious purpose of this treatment is to avoid hemorrhage which ensues on detachment of the placenta, there being no muscular contraction to close the bleeding sinuses. This was not done because, on delivery of the fetus, the placenta had become partially detached and it was decided to get it out as speedily as possible.

I think the best method of procedure in these cases will always be more or less a matter of conjecture; because of their great rarity the best form of treatment will always be open to discussion. Another point which I desire to emphasize is the wonderful improvement which followed the transfusion of blood, scoring, I think, another triumph for that operation.

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AT a meeting of the Philadelphia College of Physicians, April 5, portraits were presented to the college of the late Dr. George Couvier Harland and Dr. James Tyson. Both portraits were accepted by Dr. George E. de Schweinitz, president of the college. — *Jour. Am. Med. Asso.*

## Medical Progress.

### PROGRESS IN PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS.

BY MAURICE VEJUX TYRODE, M.D.

#### PHARMACOLOGIC AND OTHER AGENTS IN THE THERAPEUTICS OF GASTRO-INTESTINAL AFFECTIONS.

*Effect of certain agents on gastric hyperacidity and gastric mucus.* — ACCORDING to the work of Bolton, extreme hyperacidity may cause gastric ulcers, and there is no doubt concerning the irritant effect of HCl even in diminished quantity on an irritated or ulcerated gastric or duodenal mucosa. Kaufman, Aldor, Schalij and more recently Chenisse have found a deficiency in gastric mucus in hyperchlorhydria and ulcers and assume that symptoms of hyperacidity are rather due to lack of protective mucus than to the increase in HCl alone. Schalij reported some cases in which the symptoms were those of hyperacidity, but one hour after the test meal the acidity was not above normal, while the lack of protecting mucus explained the disturbance. He found that oil seemed to replace the missing mucus and to afford protection to the gastric mucosa, but this had to be given before meals. Kaufman found that silver nitrate stimulated the production of mucus and thus helped in the relief of the condition. Chenisse agrees with these authors that the absence of mucus is a most important factor in the production of the symptoms of hyperacidity, but he recommends the use of gelatine instead of oil to replace the mucus. He also stated that the benefit obtained from bismuth is probably due to its stimulating action on the secretion of mucus and supports this opinion by citing the experimental research of Dubus, who showed that bismuth not only increases the secretion of mucus, but also causes the latter to adhere better to the stomach walls. Surmount and Dubus experimented with different salts of bismuth and found that the carbonate and oxide are very inferior to the subnitrate in stimulating the secretion of mucus, yet they believe that these are of some value in hyperacid conditions on account of the basic nature of these salts.

*Hydrogen peroxide.* — It was first demonstrated by Petri, afterwards by Goodman, that hydrogen peroxide had marked effect in attenuating symptoms of hyperacidity, and these authors also showed experimentally a decrease in the HCl in the stomach. More recently Poly performed an experimental research in which he found that hydrogen peroxide produced a decided increase in the quantity of the gastric mucus. In one dog he was able to show after the usual test breakfast an increase from 0.35 up to 0.65 gm. In the cases in which he experimented and in which the animals were killed there could not be demonstrated any special changes in the glandular apparatus of the mucous membrane when the concentration was up to 2%. The author terminates by warmly recommending this agent in the treatment of hyperacidity. He himself

administers it either in the form of hydrogen peroxide in the milk of almonds or as the tablets of magnesium-perhydrol (Merck). These results with hydrogen peroxide concerning its effect on gastric mucus are exceedingly interesting in confirming the works of authors cited above.

*Atropine in gastric diseases.* — Some members of the solanaceæ family containing the tropines, as hyoscyamus and belladonna or their alkaloids, especially atropine, have been used and recommended in the treatment of gastric ulcer by various authors, including Block, Bowers, Mathien, Von Tabora and Schick. Von Tabora was one of the first to accentuate the use of atropine subcutaneously and to lay great stress upon its scientific mode of action in gastric ulcer, i. e., by decreasing the secretion of HCl and relaxing the spasm of the pylorus. Schick more recently made a rather exhaustive study of the action of atropine in obstinate cases of gastric ulcer. His experiences were similar to those of Von Tabora, and he believed that his good results came from the relaxed musculature of the stomach and pylorus and decreased gastric secretion. He had some cases where all previous methods of treatment had failed and where surgery seemed to be the only recourse. His method is to inject subcutaneously twice daily from 0.001 up to 0.0015 gm. atropine-sulphate morning and evening for a period of from four to ten weeks while the patient is on a milk-cream diet. The subjective symptoms usually disappear immediately, and this is probably to be ascribed to the paralysis of the vagus terminations in the stomach, since vagus irritability is very frequent in gastric ulcer and is probably a rather important factor in the condition.

This beneficial effect of atropine helps to substantiate the views of Mayo and others on reflex pylorospasm from ulcer or distant affections as chronic appendicitis. It is conceivable that an ulcer in the form of a fissure as observed frequently by Codman would be beneficially influenced by relaxation of the sphincter by atropine or other means, just as relaxation helps fissure in ano. It is probably because this result is obtained in gastro-enterostomy that this operation may give such remarkable results even without any other operative procedures, the *modus operandi* being drainage of the irritating fluid through a new opening, thus preventing reflex spasm caused by the passage of irritant material over an ulcerated surface.

Waldvogel has also used atropine in doses of 0.0005 gm. with most excellent results in conditions which he calls gastrospasm. He takes rather a conservative view and considers gastrospasm chiefly as a neurosis independent of organic diseases of the stomach, but generally associated with an excess of HCl. He considers this affection represents over half of all the gastric diseases. The reviewer does not agree with him in this respect.

*Serotherapy of gastric and duodenal ulcers.* — Bolton has been able to produce gastric ulcers experimentally by the use of gastrolytic sera, but failed when the normal HCl of the gastric juice was neutralized by alkalies. This led to the assumption that two factors are essential for the presence and propagation of ulcers, i. e., besides the presence of HCl, a decreased antipeptic power of the organism, and from these facts has been evolved the use of antipeptic and antitryptic sera.

Hort made a study of over a score of duodenal ulcers treated with horse-serum having antipeptic and antitryptic activities. Most of these cases had resisted all other forms of treatment, yet out of 24, 21 were apparently cured. The relief of pain, hemorrhage, hyperacidity and other dyspeptic symptoms was a most striking feature in all cases. Besides the use of serum, Hort lays great stress upon the beneficial effects of proteid increase in the diet, believing that these foodstuffs increase the resistant power of the body against the cause of the disease, besides assisting in the local repair, and in taking up the excess of peptic and tryptic molecules, while the serum strengthens the living cells of the body against the action of these.

Mayhew, who tried Hort's treatment on a number of cases, reports most successful results, a striking feature being early relief from pain. This was true in all cases, although he allowed a generous diet, much earlier than is usually possible. The anemia improved rapidly. The nausea and vomiting stopped earlier than under any other form of treatment, while the nutrition of the patient was also better. He insists that besides the horse-serum, of which he gives 10 ccm. three to four times per day in ½ oz. water immediately after meals, the following are also essential factors: (1) Absolute rest in bed for two to three weeks. (2) No drugs except a simple purgative. (3) Diet is dry throughout: no milk, soup or fish. Meals may be given every two hours, consisting in rotation of stale bread, yolks of lightly cooked eggs, white meat of chicken. Only liquid allowed is 10 oz. of hot water at 7 A.M., 11 A.M. and 1 P.M. The dietary is doubled in five days and on the seventh or eighth day pounded meat lightly cooked may be added. By the end of the second week meat forms the chief article of diet and soon a return to full diet is gained, but alcohol, soup, tea, coffee and all starchy puddlings are forbidden for six months.

Herschell, of London, is also a strong believer in the good effect of horse-serum, and this forms an important feature in his treatment of duodenal ulcer. He uses it not only during the active stages of ulceration, but also afterwards to prevent recurrences. His prophylactic method is the following: One dose after the principal meal, once daily for one month, then twice a week for another month. Afterwards in the spring and autumn he gives for one month a dose of serum twice a week.

*Mineral waters in gastric secretion.* — Formerly it was universally taught that alkalies always increased the gastric secretion, because the alkaline saliva was a natural stimulant to this secretion. We know now that the importance of the

saliva as a gastric stimulant has been much overrated, and, in fact, experimental data has been brought out to show that alkalies may not only neutralize but decrease the secretion of HCl in the stomach. Since in mineral waters used for therapeutic purposes the presence of alkalies is usually complicated by that of various neutral salts, it is thus very interesting to note the researches of Theohari and Babes. According to their work, which was on dogs with a Pawlow's fistula, the gastric secretion is much influenced by different mineral waters, the various elements being influenced in different ways. The water of one of the springs tested contained 9.7 gm. of sodium chloride and 9.7 gm. of sodium bicarbonate, and this water invariably checked the gastric secretion. Water from another spring with 13.2 gm. of the chloride and only 6.9 gm. of sodium bicarbonate stimulated the secretion, increasing it by 107% in some of the tests. The average increase was from 40 to 80%.

This corroborates the view generally held that for diseases of the stomach with a decrease of HCl, such waters as those of Kissingen and Homburg, which contain a rather higher proportion of sodium chloride, are more appropriate, while for those cases with increased acidity, such waters as those of Carlsbad and Marienbad, containing a lower proportion of sodium chloride, but being richer in sodium bicarbonate, are better suited.

*Caffeine on the gastro-intestinal tract.* — Salant, after a long investigation on caffeine, has found that doses insufficient to produce immediate symptoms are able to cause marked chronic intoxication in rabbits, dogs and cats. The poisoning consists of marked effect on the nutrition of the animals, loss of flesh and strength, frequently terminating in death. The changes found at autopsy showed inflammation and ulceration of the gastro-intestinal tract, but especially of the stomach. These results were obtained as well by subcutaneous as by internal administration. It may be remarked in this connection that diarrhea and intestinal putrefaction were frequently symptoms, especially in dogs. Finally, experiments were also made on rabbits to ascertain the effect of starvation. When starved four to five days the resistance to caffeine was markedly diminished, the fatal dose being about 30% less than in well-fed rabbits.

These results are exceedingly interesting and substantiate the reviewer's idea that both tea and coffee are very undesirable in all forms of gastro-enteric disease, on account of the local irritant effect besides the action on the nervous system.

*Phenol and the gastro-intestinal tract.* — Sollman, Hanslich and Pilcher performed a research with a view of studying the absorption of phenol in the gastro-intestinal tract and have come to some very interesting conclusions as follows: (1) When phenol is placed in the alimentary canal, the absorption at first is very rapid, but is quickly checked and soon practically arrested. (2) When phenol is placed in the stomach, only traces pass into the intestine; a large proportion could be recovered by gastric lavage. (3) The check of the absorption coincides in time with the development of toxic, systemic effects of phenol. The authors believe and show experimental evidence to support the fact that this action of phenol is not due to corrosion of the bowels, but rather to a specific effect.

These results are very valuable in teaching us the scientific method of treatment for phenol poisoning. On theoretical grounds both gastric lavage and purgation are distinctly indicated. It is interesting to note in their experiments the protective mechanism of nature in that absorption begins to diminish as soon as toxic symptoms arise.

*Thymol in enteritis.* — Cade and Garin observed a series of patients between twenty-five and forty years of age with variable syndromes, but in most cases having some diarrhea and invisible hemorrhages persisting for some months and years. In some cases periods of constipation intervened and in some the tenesmus and colics simulated dysentery, or the false membranes in the stools suggested mucomembranous colitis. Almost all the patients were neurasthenics, and many showed predominant gastric symptoms. They uniformly found in all the cases of this series eggs of the tricocephalus dispar and occult blood in the stools, from which they made the diagnosis that the enteritis was due to the above-named parasite. They gave thymol in 15-gr. doses three to four times a day for three to four days, following with a saline purgative, the patient abstaining in the meantime from alcoholics and oil. This course was repeated after an interval of a few days. It did not always remove all the worms even with several courses, but always produced great improvement in the patient's condition and never any untoward effects.

Raillet, having found worms in the appendices of infants, resolved to try the effect of thymol in children having appendicitis. He gave thymol for several days before the operation, but the worms when found in the appendix were never killed by the thymol. This shows that drugs can have no influence within the blind appendix.

*Intestinal poisons in arteriosclerosis.* — Metchnikoff continued his studies on the influence of certain intestinal poisons on arteriosclerosis, i. e., the phenyl-sulphate of potassium and paracresol. He finds that these substances have very little immediate toxic effect even in large doses, but the prolonged ingestion of small doses produces well-marked atheromatous changes and also lesions of hepatic cirrhosis. One monkey who had received paracresol for two months in small doses, at post-mortem section showed marked cerebral and renal arteriosclerosis, besides liver changes named above. Metchnikoff believes that in this series are to be found a cause of physiologic (?) arteriosclerosis. To prevent this he recommends a mixed diet in preference to a purely vegetarian régime. He also believes that these putrefactive changes may be checked by the employment of lactic-acid bacteria.

*Antiseptic action in the stomach.* — Collodi, after an extensive research, comes to the conclusion that the bactericidal power of the gastric juice is due principally but not exclusively to HCl. He has also shown that neutralized gastric juice has a definite antiseptic action, but probably not sufficient to protect individuals from intestinal infections in all cases. The antiseptic action is tremendously influenced by the character of the diet. It is most marked with meat, less so with milk, still less with starchy foods, very slight with fats and almost absent with water. He finds also that pleasant food increases the antiseptic action in parallel lines with the secretion.

*Nicotine on gastric secretion.* — Skaller made experiments on dogs with tobacco smoke dissolved in water and injected into the circulation and he found marked increase in the gastric secretion when the cigar smoke contained nicotine, but not if it was free from nicotine. He feels no hesitancy in saying that the products of combustion in tobacco smoke are harmful to the stomach, yet the chief noxious agent is nicotine. His experiments well explain the gastritides, the hypersecretions and hyperacidities frequently seen in excessive smokers. He has named the disease "nicotine hypersecretion."

*Pantopon and gastric secretion.* — Rodari's experiment on dogs with Pawlow's fistulas have shown that pantopon (the mixture of opium alkaloids) causes a marked increase in the gastric secretion, but, as has been shown before for morphine, it decreases the motility. According to this research pantopon seems to the reviewer a most undesirable drug when symptoms of hypersecretion are present.

*Cykloform in gastro-intestinal affections.* — Wyss made experiments and clinical tests with cykloform, a local anesthetic practically insoluble in water of the type of anesthesin and orthoform. He found its toxicity very low, 1 gm. of cykloform producing no toxic effect whatever on a cat, while its local anesthetic action is exceedingly powerful. He recommends it internally in gastralgia in doses of 0.2 to 0.5 gm. several times daily. In such conditions, and also in vomiting of pregnancy, he obtained remarkably good results. He has used it with success and recommends it in painful affections of the anus and rectum in the form of 20% ointment or suppository.


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## Book Reviews.

*Makers of Man.* A Study of Human Initiative. By CHARLES J. WHITBY, M.D. (Cantab.). With forty-seven half-tone and other plates. New York: Rebman Company. 1910.

This philosophic treatise by a physician presents the author's experiments in the psychologic elucidation of genius, based on analysis of the careers of "forty world-famous individuals," whom he divides, according to their temperaments, into four groups,— the practical, the esthetic, the intellectual and the ethico-religious. The main result of this inquiry he considers to be the "demonstration of the predominance of a supermechanical, super-physiological spontaneity in the determination of human careers." Accordingly he believes that the genius of the future will fit less and less satisfactorily into this classification, but will tend to become a combination of all four categories, a sort of *Uebermensch*. To Dr. Whitby the lives of great men all "show that unity of manifestation which we expect from the exfoliation of a self-determining spontaneity." To those of us to whom such lives had not hitherto afforded this expectation so vividly as the reminder that "we can make our lives sublime," the doctor's studies furnish material for very profitable reflections in the interpretation of character. Especially interesting, in the chapter on "Power in the Crucible," is his psychologic analysis of the relations of woman to man and superman.

*A Treatise on Diseases of the Eye.* By JOHN E. WEEKS, M.D., Professor of Ophthalmology in the University and Bellevue Hospital Medical College, New York. In one octavo volume of 944 pages, with 528 illustrations and 25 full-page plates. Philadelphia and New York: Lea & Febiger. 1910.

This treatise is really a condensed encyclopedia of ophthalmology; everything that is valuable and important is included. The author with great industry has collected his material and selected it with skill and has succeeded in impressing his own mind on the work, so that the book is not a mere compilation. The best work of former years is included as well as the most recent progress. The illustrations are numerous (528) with many colored plates, including a full-page one of the trachoma bodies of Halberstädter and Prowazek. The embryology and anatomy of the eye are treated comprehensively in the first part of the book. An excellent chapter on the relation of diseases of the throat, nose and accessory sinuses to the eye is given. The chapter on operations is valuable, especially the part on plastic operations on the lids. The book will prove as useful to the specialist as to the general practitioner, and in printing, paper and general arrangement leaves nothing to be desired.

*Introduction to the Analysis of Drugs and Medicines.* By BURT E. NELSON. New York: John Wiley & Sons. 1910.

Nelson's book fills a decided need, for with the present more extensive drug analysis carried on by government, state and municipal health boards and private individuals, some small work with tangible facts and methods such as this is exceedingly valuable. The author gives both the chemical and microscopic methods of recognizing drugs and chemicals. A most valuable addition to this excellent work is a table of chemical compounds used in medicine, arranged according to melting point, boiling point and carbon contents. Any one who has wearily searched for an unknown body in a mixture will appreciate these tables.

*The Surgery of Childhood.* Including Orthopedic Surgery. By DEFOREST WILLARD, A.M., M.D. (Univ. of Penn.), Ph.D., Professor of Orthopedic Surgery, University of Pennsylvania; Surgeon (twenty-six years) to the Presbyterian Hospital; Surgeon-in-Chief, Widener Industrial School for Crippled Children; Ex-President American Surgical Association, American Orthopedic Association, Philadelphia Academy of Surgery; Ex-Chairman Surgical Section, American Medical Association; Fellow Philadelphia College of Physicians, etc. With 712 illustrations, including 17 in colors. Philadelphia and London: J. B. Lippincott Company.

Willard's handsome volume of 800 pages is extremely worth while and is an important addition to our knowledge of the subject of surgery of children. It is elaborate, it is inclusive, and it makes clear to the reader the notable distinction which exists between the surgery and surgical anatomy of children and the corresponding surgery of adults. As the author says, "It is exceedingly important that the pediatric surgeon should acquaint himself with the anatomy of the child. The teaching in this respect is usually very imperfect, since routine dissections are usually made upon adults, and the ordinary graduate has no knowledge whatever of children's anatomy. The exceeding smallness of the organs and tissues will be a surprise to one who has not dissected infants and small children. The extremely narrow diameter of the trachea, for instance, readily accounts for the great interference to respiration as seen in laryngeal diphtheria." In his opening paragraph he remarks further upon the well-known truth that "surgery of childhood differs in many respects from surgery of adult life, and requires special consideration both by the general surgeon and the family physician. The pediatric surgeon must necessarily depend largely upon objective symptoms for his conclusions; consequently he must possess a high degree of acute observation, intelligence and discrimination in arriving at a diagnosis and in supervising the treatment."

The author takes up in their order all of the important surgical subjects as applied to the child. He insists upon the need of a broad general knowledge of disease and the importance of close co-operation between the internist, the surgeon and the more narrow specialists. Many surgeons have seemed to think that the special interest in children's diseases is extremely limited, and concerns itself with such conditions as epiphyseal fractures, congenital malformations and abnormalities such as hydrocephalus, spina bifida, etc., and with unusual internal derangements such as infantile stenosis of the pylorus. In fact, these conditions are but special instances of the very wide difference which exists between the disease processes found everywhere throughout the body in childhood on the one hand, and in adult life on the other.

The book is anything but a treatise on orthopedic surgery, though, indeed, the author does devote several chapters to orthopedic surgery proper, and extremely important chapters they are. In this connection one may wish he had said something more definite regarding the malformations and displacements of the digestive organs, conditions which are now recognized as playing an important part in the healthy development of children, since they directly influence disease processes in other parts of the body.

While the writing is somewhat disjointed and fragmentary in places, the book holds well together as a whole. It is interesting and will be an important addition to the library of the general surgeon as well as of the pediatric surgeon.

*The Cœliac Axis.* By PIERRE DESCOMPS. Paris: G. Steinheil. 1910.

This painstaking French work is the first of a series projected by the author on his researches in the surgical anatomy of the abdominal arteries. The book is extremely thorough and lucid and is beautifully illustrated. It would seem, however, to be of less practical value to the surgeon than to the anatomist interested in the study of arterial variations.

*Anemia.* By DR. P. EHRLICH and DR. A. LAZARUS. Part I. Vol. I. Normal and Pathological Histology of the Blood. Second edition (enlarged and to a great extent rewritten). By DR. A. LAZARUS and DR. O. NAEGELI. Translated from the German by H. W. ARMIT, M.R.C.S., L.R.C.P. (London). With 5 illustrations in the text and 5 colored plates. New York: Rebman Company. 1910.

This first volume of the second edition of Ehrlich's standard book on the blood, prepared for publication by two of his pupils, is of particular interest at this time when the author has become so conspicuous for his work on atoxyl and other arsenic derivatives in the treatment of trypanosomiasis and of syphilis. The illustrations are good but rather few; the text is admirable, though the translation is hardly idiomatic. As a manual of hematology, this book is complete. Later volumes may be expected to present in detail the clinical aspects of certain blood diseases in the light of the progress of the past ten years.

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## DRESDEN INTERNATIONAL HYGIENE EXPOSITION.

THERE is at present in progress at Dresden, Germany, an International Hygiene Exposition, which was opened on May 1 and will continue until Oct. 31, and which is intended to represent on an elaborate scale the progress made by this science during the past twenty-five years. Preliminary details of the project have been at hand for some time. In fact, the exposition was first planned as long ago as 1903, and a convention to prepare for it was held at Dresden in 1906. Since then, preparations have been steadily under way, and the arrangements have been completed during the current spring.

The exposition is divided into twelve general sections. The first will demonstrate the relations of light, air, soil and water to human health. The second will deal with housing conditions. The third considers foodstuffs and nutrition, the scientific value of foods and their practical handling. The fourth comprises clothing and bathing. The fifth includes professions, trades and occupation diseases. The sixth deals with infectious diseases; the seventh with nursing and aid; the eighth with children and adolescents; the ninth with traffic and its relation to disease; the tenth with army and navy hygiene; the eleventh with vital statistics; and the twelfth with burial and cremation.

In addition to these general divisions, there are special sections on tuberculosis, sex hygiene, alcoholism, cancer, dental and oral hygiene and the history of sanitation. There is also a section on popular sports, in connection with which will be held numerous athletic and gymnastic exhibits, games and competitions, notably an international swimming contest on June 18 and a national men's swimming contest on July 30. Special exhibits have been sent by many nations, especially by China, to illustrate its progress in the art of architecture.

In conjunction with the several sections are to be held in Dresden, also, during the summer, meetings of numerous learned, scientific and technical societies. One of these, the German Association for School Hygiene, has already had its sessions on May 6 and 7. On June 8 will be the meeting of the Association of Medical School Inspectors; and on Aug. 2 to 5 will be held a Temperance Congress. Other organizations that will meet at Dresden this summer are the German Society for the Hygiene of the Races, the National Society of German Engineers, and the Association for the Study of States' Science.

Hardly any European city could have been better selected for such an exposition than Dresden. As the capital of Saxony, it is a seat of wealth, power and dignity; and it is, besides, a community of notable cultivation and enlightenment. Superbly situated, architecturally imposing, with rich treasures of art and science, Dresden is a center of German civilization. The spacious grounds of the Brühl, the Zwinger and the Volksgarten, and the buildings of the Zwinger, the Albertinum and the Johanneum afford admirable location for the various exhibits. The demonstrations of progress and methods in hygiene should be notable, and there could not be a more appropriate scene than Dresden for this exposition of what is perhaps most characteristic in the advances of twentieth-century science.

## AN UNCROWNED KING.

THE Regent Luitpold of Bavaria, now a nonogenarian, has since 1886 ruled with kingly power over a people mightily affectioned toward him; he wears no crown, because King Otto still lives, hopelessly insane, and because the Bavarian constitution makes no provision for the deposition of its sovereign. Nevertheless Prince Luitpold occupies the securest of thrones — one that is fixed in the hearts of his subjects. He embodies the rugged Bavarian virtues; kindly, generously simple of nature, his subjects feel him to be one of themselves, though far above them, and a father to them all.

We may here not further extol his manifold excellencies except to note, as altogether characteristic of the man, his refusing any costly and elaborate celebration of his ninetieth birthday; he expressed but one wish, that when it came

(on March 12, last) the public should, if it pleased, establish a charitable fund, the income of which should be used for the common welfare, and for philanthropic purposes.

A score of years ago Kaiser Wilhelm wrote in the Golden Book in the town hall of Munich, the Bavarian capital: *Suprema lex regis voluntas.* But Luitpold showed himself a truer ruler and a wiser controller of human destinies when he wrote in that same book, a few years after, his own guiding motto: *Salus populi suprema lex,* — the health of the people is the supreme law. The Prince Regent thus sensed better than the Emperor that the happiness and prosperity of any nation, its most precious assets indeed, lie in the health and physical welfare of its people. And we may assume the Kaiser has seen some light since his inscription twenty years ago in that Golden Book, for he applauded the oldest living monarch on his ninetieth birthday as "the incarnation and model of all the princely virtues."

## A NEW PREGNANCY CLINIC.

ON Friday, May 5, was opened, at 33 McLean Street, the new Pregnancy Clinic of the Boston Lying-In Hospital. The purpose of this new department of the hospital is to afford to all prospective patients, both house and out-patient cases alike, such care and observation during their pregnancy as they should and would receive at the hands of a good private physician; with a view not only to the early detection, the prevention or the proper treatment of the more serious complications of pregnancy, but also to the hygienic education and training of patients in such manner as shall best prepare them for labor and shall tend to promote normal and healthy fetal development. To this clinic also all house and out-patients, on discharge, will be referred for observation and treatment of difficulties in lactation and other post-puerperal complications.

In this manner it is hoped in time to keep every patient under efficient observation and guidance for a period of approximately two years, from the beginning of pregnancy to the establishment of the baby on independent feeding. The work of this clinic, it is believed, should be of service not only to individuals by prevention or timely avoidance of serious trouble, but also to the community and to the medical profession, by demonstration of the methods and diffusion of a realization of the importance of extending the obstetrician's work from the brief periods of labor and puerperium over the periods of pregnancy and lactation as well. General application of such methods should conduce to the conservation both of maternal and of fetal health and life.

## COMPENSATION FOR INDUSTRIAL ACCIDENTS.

LAST year a commission was appointed by the Massachusetts State Legislature "to determine upon a plan of compensating employees for injuries sustained in the course of their employment." This commission has been continued by the present General Court, and in connection with its investigations has supplied to every employer in the state suitable blanks upon which he is requested to report to the commission the details of every accident occurring to a workman in his employ. This co-operation of employers is invited in order to obtain data upon which to base "an estimate of the probable cost of providing for the relief of injured employees and their dependents."

The principle of compensation for industrial accidents has in it elements of danger in the possible subversion of the care, wholesome pride and instinct of the individual in looking out for himself. Before it is established, therefore, it deserves careful consideration in every aspect, and it is to be hoped that employers throughout the state, by making prompt and thorough report on all accidents and injuries, will cordially aid the present commission in giving the subject a complete and adequate investigation.

## REPORT OF BOSTON STATE HOSPITAL.

THE second annual report of the trustees of the Boston State Hospital describes the work of this institution for the year ending Nov. 30, 1910. It refers particularly to progress made in the construction of the proposed new "psychopathic hospital for the first care and observation of acute cases," which it is expected will be ready to receive patients in the spring of 1912.

The superintendent's report shows an increase of seventy-one in the number of patients under care at the close of the year. It describes particularly an epidemic of paratyphoid which occurred in the hospital during October, 1910, and the method of antityphoid inoculation which was employed for the protection of house officials and employees.

A special report describes the research work done by Dr. Morse on comparative morphologic, cultural and biologic study of different strains of

diphtheria bacilli with a view to determining a method for their differentiation, in routine diagnosis, into pathogenic and diphtheroid forms. The report of the superintendent of nurses notes the policy of increasing the number of women nurses in the male wards, and the change to a ten-hour day of service for all nurses.

## INCREASE OF SUICIDE IN THE UNITED STATES.

In an address last week before the New York Teachers' College, Frederick H. Hoffman, statistician of the Prudential Company, presented striking figures relative to the increase of suicide in this country. In the 65 largest American cities there was in 1890 an annual suicide rate of 12.3 to every 100,000 of population. In 1895 the rate was 15.8; in 1904 it was 20.7; and since 1907 it has remained above 20. The highest actual rate in a single city was 60 in San Francisco. Oakland, Cal., stood second; and Hoboken, N. J., came third, with a rate of 52.6.

These statistics are impressive. The factors which determine suicide are probably manifold. Doubtless the fundamental cause is in all cases the same, a primary defect in mental stability. But the predisposing and occasioning causes are many, and these causes seem to be produced by the life of modern urban civilization with increasing frequency.

## MEDICAL NOTES.

An English Centenarian. — Miss M. B. Cobbett, of Exeter, in Devonshire, celebrated on March 29 the supposed one hundred and first anniversary of her birth. She was born in London, but has resided in Exeter for forty-six years. She is said to be in excellent health.

Proposed Tax on Proprietary Medicines. — Report from Washington, D. C., states that a bill introduced on May 6 before the national House of Representatives, and referred to the Ways and Means Committee, provides "a stamp tax of one eighth of a cent on every five cents' worth of proprietary medicines, perfumes, cosmetics and similar articles prepared under secret or privately owned formulæ."

A Prolific Father. — Report from Wilkesbarre, Pa., states that, on May 7, a twenty-fifth child was born to Mr. Nathan Valone, of the neighboring town of Pittston. Mr. Valone, who has been twice married, had by his first wife 16 children, of whom 14 are now living. By his second wife he has already had, in ten years, 9 children, of whom 8 are living.

Illness of King Alfonso. — It is reported from Paris that King Alfonso, of Spain, has been ordered by his physicians to Lezins, Switzerland, to be treated there for tuberculosis of the throat. The king, whose health has always been delicate, is not yet twenty-five years old. His father, Alfonso XII, died of phthisis at the age of twenty-eight. It is also stated from Madrid that the King's second son, Prince Jaime, is soon to have his tonsils and adenoids removed. The ailments of commoners affect kings as well.

Russian Method of Preserving Meat. — In a recent communication from St. Petersburg, the military attaché at the American embassy in that city describes a new process of preserving meat, recently invented by Dr. Michael Vlasevich, a Russian military surgeon. This process consists essentially in dipping the carcass into a tank of strong acetic acid, then hanging it in the air to dry. Carcasses thus treated are said to keep a long time and to remain good for food.

Central Bureau for Medical Instruction. — From Berlin is reported a project for the betterment of medical education by the establishment in that city of a central bureau of the international committee for post-graduate medical instruction. It is intended that this bureau shall act as a clearing house for all persons pursuing graduate education abroad. A similar system might to advantage be organized in this country to co-ordinate graduate instruction at the different universities.

Sterilization of Criminals in New Jersey. — It is reported that on May 4 the governor of New Jersey signed the so-called "sterilization bill," recently passed by the legislature of that state, providing for the asexualization of criminals and defectives. A board of examiners is to be appointed to carry out the law. New Jersey is the fourth state in the Union to enact such a measure, similar laws being already operative in Indiana, Connecticut and California.

Dinner to President Taft. — On Thursday, May 4, a dinner and reception were given by the Philadelphia Medical Club in honor of President Taft, who was the guest of the occasion. Andrew Carnegie and John D. Rockefeller were also among those invited, in recognition of their services in the promotion of research in preventive

medicine. At the reception addresses were made by President Taft; by Dr. S. Weir Mitchell; by Dr. William H. Welch, on "The American Medical Association"; by Dr. Charles A. L. Reid, on "National Medical Legislation"; by Surgeon-General George H. Torney, on "The Army Medical Corps"; and by Surgeon-General Charles F. Stokes, on "The Medical Corps of the Navy."

POSTPONEMENT OF INTERNATIONAL OPIUM CONFERENCE. — Report from London, on May 6 states that the negotiations between England and China for the restriction and ultimate extinction of the opium traffic to China from India, to which we referred in last week's issue of the JOURNAL, have been successfully concluded, and that India has agreed to reduce her annual exportation of opium at such a rate that it will cease entirely in 1917. It is further announced from Washington, D. C., that the International Opium Conference, which was to have met at the Hague next July, has been posponed for a year, owing to the unreadiness of Germany, Japan and Portugal to present the requisite data relative to their own opium trade.

SOME ADVERSE OPINIONS OF DOCTORS. — In a review of Dr. Robert N. Willson's book on "Medical Men in the Time of Christ," the *British Medical Journal*, describing the Jewish practitioners of that era, quotes from the Talmud a passage stating that it is legitimate for them "to heal Gentiles only for the sake of the fee, but not to save their lives in seasons of danger." Apparently doctors were not held in high esteem in those days, for the Talmud elsewhere avers that "all ass-drivers are wicked, camel-drivers are honest, sailors are pious and physicians are destined for hell." (*Medicorum optimus dignus est Gehennae.*) This opinion of doctors has been shared by some of later date. Perhaps even the "Religio Medici" has diffused the belief that "*ubi tres medici ibi duo athei.*" Granting the worst that may be said of us, we may at least rejoin to such critics, in the modified words of Omar:

> "Of our base metal may be filed a key
> That shall unlock the door they howl without."

## BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, May 2, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 49, scarlatina 40, typhoid fever 12, measles 199, smallpox 0, tuberculosis 72.

The death-rate of the reported deaths for the week ending May 2, 1911, was 18.01.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, May 6, 1911, was 260, against 235 the corresponding week of last year, showing an increase of 25 deaths, and making the death-rate for the week, 19.68. Of this number 140 were males and 120 were females; 256 were white and 4 colored; 166 were born in the United States, 86 in foreign countries and 8 unknown; 55 were of American parentage, 169 of foreign parentage and 36 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 46 cases and 6 deaths; scarlatina, 34 cases and 2 deaths; typhoid fever, 9 cases and 2 deaths; measles, 187 cases and 2 deaths; tuberculosis, 94 cases and 27 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 36, whooping cough 3, heart disease 30, bronchitis 6. There were 17 deaths from violent causes. The number of children who died under one year was 43; the number under five years, 67. The number of persons who died over sixty years of age was 72. The deaths in hospitals and public institutions were 113.

ST. MARGARET'S HOSPITAL. — On Sunday, May 7, the new St. Margaret's Hospital, Dorchester, was dedicated with appropriate ceremony, and opened for the inspection of visitors. This hospital, which is to be an adjunct to the St. Mary's Infant Asylum, was founded by the Rev. Peter and the Rev. Michael Ronan, in memory of their mother, who died several years ago. It is intended chiefly for obstetric but to a certain extent also for general surgical cases.

POLIOMYELITIS IN PROVIDENCE. — On May 1 was reported at Providence, R. I., the first case of acute poliomyelitis known to have occurred in that state this year.

A LIVING CENTENARIAN. — Benjamin Priest, of Canaan, Me., who is locally reputed to have been born in 1811 at Waterville, Me., celebrated last week the supposed centennial anniversary of his birth. He is said to have enjoyed excellent health all his life.

PENALTY FOR TEARING DOWN A MEASLES PLACARD. — In the Malden (Mass.) District Court last week, a resident of the adjacent town of Melrose was fined $10 for tearing down from his

house a notice posted there by the local board of health stating there was a case of measles within.

Fine for Practicing without Registration. —Before the Newton (Mass.) District Court last week, a resident of West Newton was fined $100 for practicing medicine without a registration certificate. The defendant, who styles himself "optologist, refractionist and optical masseur," and who claims to cure blindness and other ocular ailments by lights, lenses and optic gymnastics, appealed from the decision of the court and was held in $300 bail.

Protection of Foods Exposed for Sale. — In the issues of the Journal for March 16 and May 4 we noted the purpose of the Boston Board of Health to enforce the rule requiring foodstuffs exposed for sale to be protected from dust and flies. Strenuous objection to this ordinance has been made by many dealers, one of whom has absolutely refused to comply, in order that he may be prosecuted and make his case a test of the validity of the regulation.

A Leper from Pawtucket. — Last week a case of leprosy was discovered in Pawtucket, R. I. The patient, a boy of fifteen, who came north from New Orleans five years ago, is at present under quarantine at his home in Pawtucket. Attempt is being made to arrange with the Massachusetts State Board of Charity to have him transported to the leper colony on Penikese Island, off New Bedford.

Infant Mortality in Boston, New Bedford and Fall River. — In a recent address before the New Bedford (Mass.) Medical Society, Dr. John M. Connolly, of Boston, presented statistics relative to the high infantile death-rate prevailing in New Bedford. In the year 1909, 47% of the total deaths in that city were of children under five years and 34% were of children under one year of age, figures exceeded in this state only by Fall River. In Boston during 1910 the infantile death-rate was 4.3 per thousand of population; in New Bedford it was 8.5. These data merely reiterate well-known facts relative to infant mortality, but should serve to emphasize them in such way as to promote the efforts at improvement already on foot.

Studies in Occupational Hygiene. — The monthly bulletin of the Massachusetts State Board of Health for March contains a paper entitled "Practical Studies on Occupational Hygiene," by Dr. Elliott Washburn, state inspector of health of Norfolk and North Bristol counties. The author describes numerous observations in regard to the sanitary conditions of workers in various trades that may be made and recorded by inspectors in connection with their routine duties, and points out the immediate practical value of data thus collected in inquiries relative to the causes of disease, the sources of mortality and the effects of localities, conditions and circumstances on the public health.

Medical Women's Association. — There has been organized in Boston recently the "Medical Women's Association for Aiding Women in Medical Work in Foreign Countries." Its purposes are "to raise money to endow already existing medical institutions for women, to provide scholarships for native women in medical schools, to take a personal interest in women medical students studying to enter the foreign fields, and to provide equipment and hospital facilities." Two sections have been formed, one for India and one for China. The officers of the new organization are as follows: President: Dr. Frances M. Morris. Vice-Presidents: Dr. Helen I. Woodworth, Dr. Edith Hale Swift. Treasurer: Dr. Mary R. Mulliner. Secretary: Dr. Blanche A. Denig.

Some Bequests in Medical Charity. — The will of the late Sarah Elizabeth Read, who died in Boston recently, was filed for probate last week. Among many charitable bequests, it contains legacies of $5,000 each to the Channing Home and the Willard Hospital for Dipsomaniacs, Roxbury.

The will of the late Mrs. Elizabeth O. P. Sturgis, filed last week for probate at the Essex County Probate Court at Salem, Mass., contains bequests of $20,000 each to the House of the Good Samaritan, the Kindergarten for the Blind, the Boston Nursery for Blind Babies and the Industrial School for Crippled and Deformed Children.

The will of the late Joseph W. Leighton, of Brookline, Mass., who died on April 26, was filed last week for probate in the Norfolk Probate Registry at Dedham, Mass. It contained numerous charitable bequests, among them one of $75,000 to the New England Home for Little Wanderers, and one of $12,000 to the Children's Hospital, Boston.

## NEW YORK.

BEQUESTS. — Among the charitable bequests in the will of the late Charles Engert, of Brooklyn, are the following to Brooklyn institutions: $10,000 to St. Catharine's Hospital, and $5,000 each to the German Hospital and to St. Mary's and St. Peter's hospitals.

TESTS OF SARATOGA SPRINGS WATER. — State chemist Thomas Conkling reports that recent tests made by him show that the water of one of the springs at Saratoga, Hathorn No. 1, which was injuriously affected by the suction of carbonic acid gas pumped for years by a commercial company from the mineral springs basin, is now regaining its former activity and medicinal properties. All such pumping has been permanently stopped, and there is thus ground to believe that, under the scientific management of the State Reservation Commission, the exhausted springs will again rise naturally, and Saratoga be restored to its pre-eminence as an American health resort.

CENTENARY OF Dr. JOHN WILLIAM DRAPER. — The centenary of John William Draper, M.D., LL.D., scientist, inventor, historian, philosophical writer and teacher, who was for many years professor of chemistry and physics at the university, was celebrated at New York University on May 5. Professor Draper was the first to take a photograph of the human countenance (his sister, Catharine Draper, being the first person whose portrait was made in this way), and also the first to photograph the moon, and it was largely through his advice and assistance that Prof. S. F. B. Morse was enabled to bring his telegraphic system to successful fruition. At the memorial exercises Dr. John J. Stevenson, professor emeritus of geology, presided, and among those who made addresses were Dr. Egbert LeFevre, dean of the University and Bellevue Hospital Medical College, and Professors Lamb, Bristol, Henschel and M. B. Brown. Resolutions eulogistic of Dr. Draper, which had been recently passed by the Board of Aldermen, were read by Francis P. Bent, vice-chairman of the board, and in honor of the occasion the City Hall, by order of Mayor Gaynor, was decorated with national, state and municipal flags. The occasion was a dignified and appropriate tribute to the memory of an early and distinguished American physicist.

PURE MILK FOR NEW YORK. — The contract for supplying pure milk for the sixty stations to be opened by the committee on reduction of infant mortality of the New York Milk Committee has been awarded to the New York Demonstration Company. This company, which was organized only recently, established a plant and laboratory at Homer, Cortland County, N. Y., for experimenting on certain well-defined plans proposed by Dr. Charles E. North, bacteriologist of the milk committee, with the idea of furnishing absolutely pure milk of high quality at less cost than the prevailing prices. It has agreed to supply for eight cents a quart guaranteed milk, bottled at the dairy, of practically the same grade as that for which the high-class dealers charge fifteen cents. The plant at Homer, which is in charge of a competent bacteriologist, has a capacity of 8,000 quarts of milk daily, although the present contract with the committee calls for only 4,500 quarts.

COLUMBIA UNIVERSITY — GIFTS, APPOINTMENTS. — At the meeting of the trustees of Columbia University on May 1, it was announced that a gift of $40,000 had been received from an anonymous donor for surgical research, of which sum $10,000 is to be expended for this purpose each year for four years. Dr. Henry Pike was appointed assistant professor of physiology. Dr. Pike is a graduate of Indiana University and of the University of Chicago, and has been connected with the latter institution since 1903. Another appointment made was that of Dr. Warfield T. Longcope, of the University of Pennsylvania and the Pennsylvania Hospital, to be assistant professor of medicine, and Edward Kempton Adams, professor of experimental physics in Johns Hopkins University, was named Edward Kempton Adams Research Fellow for 1911–12. The title of Henry Fairfield Osborn, Sc.D., was changed from DaCosta Professor of Zoology to Research Professor of Zoology.

OPENING ROCKAWAY BEACH HOSPITAL. — The Rockaway Beach Hospital, in the Borough of Queens, a free institution, built at a cost of $100,000, was formally opened on April 30. Addresses were made by clergymen of different churches, and the hospital was accepted on behalf of the city by Commissioner of Public Works Dunn. There was singing by school children, and before the exercises a parade of 1,500 persons representing various religious, civic and political societies.

WORK OF THE "FLY" COMMITTEE. — A special feature of the campaign the "Fly" Committee of the American Civic Association, which was

organized last year, has undertaken is to be the enlistment of the interest of children, and Edward Hatch, Jr., of New York, has offered cash prizes to the pupils of public and parochial schools in various cities of the country for the best essays on "The House-fly as a Carrier of Disease." He believes that in this way not only will the children be made familiar with the sanitary lessons it is desired to inculcate, but the parents, through their interest in the preparation of the essays, will come to realize the dangers resulting from the fly pest and exert themselves in its suppression. In New York, the prize plan will have its first trial in the schools of the Children's Aid Society, whose teachers have already received the committee's bulletin entitled, "Beware of the Dangerous House-fly," for distribution among the pupils, in order to afford material for the essays. The committee has had prepared a traveling fly exhibit, which is now on view at the American Museum of Safety on West 39th Street, and it is purposed to loan it to such organizations as make application for it. In Rochester, it is planned to have the moving picture film, "The Fly Pest," exhibited in the public and parochial schools during the entire month of May. This is the film which has been introduced in many of the motion picture shows through the influence of the committee, which has found it one of its most powerful educational agencies.

## Current Literature.

### Medical Record.

April 29, 1911.

1. *Conner, L. A. *Pulmonary Symptoms as Premonitory Signs of Venous Thrombosis.*
2. Hayes, W. V. *Street Sanitation in New York, with Some Suggestions for Its Improvement.*
3. Austin, C. K. *A Case of Multiple Myeloma with Albumosuria.*
4. Weinstein, J. W. *Drugs in Gastric Therapeutics.*
5. Crothers, T. D. *The Significance of a History of Alcoholic Addiction.*
6. Dawbarn, R. H. M. *Short Talks with My Students and Others; Being Random Suggestions for the Younger Practitioners.*

1. Conner believes that the percentage of cases in which pulmonary embolism complicates venous thrombosis is larger than is generally supposed. Pulmonary symptoms are often the first indication of a beginning venous thrombosis. They are the result of the lodgment in branches of the pulmonary artery of emboli, derived from the newly formed friable thrombi in the peripheral veins. The symptoms are frequently slight and transient, one or more of the cardinal symptoms — thoracic pain, distress, cyanosis, air hunger, cough, hemoptysis, chills — often being lacking. The physical signs are either those of plastic pleurisy or of a small area of consolidation. The chances of pulmonary embolism are greater at the beginning of a venous thrombosis than later on in its course. Some of the obscure chills in typhoid fever are related to the lodgment of pulmonary emboli. [L. D. C.]

### New York Medical Journal.

April 29, 1911.

1. Pedersen, V. C. *Therapeutics of Syphilis.*
2. Rytina, A. G. *The Present Status of Salvarsan Therapeutics.*
3. *Wise, F. *Dangers and Contra-Indications of Salvarsan.*
4. Ballenger, E. G. *A New Apparatus for Administering Salvarsan ("606") Intravenously.*
5. Thomson, W. R. *The Intravenous Injection of Salvarsan.*
6. *Rambaud, G. G. *Rabies.*
7. King, H. D. *Hiccough — A Few Remarks as to Treatment.*
8. Frescoln, L. D. *Uses of the "Cold Cautery," Especially in Dermatology.*
9. Kennedy, J. C. *Is Antitetanic Serum a Factor in the Cure of Tetanus?*

3. Wise gives the following absolute contra-indications to the use of salvarsan: Aortic insufficiency or stenosis, aneurysm, myocarditis, angina pectoris, peripheral arteriosclerosis, cases prone to cerebral hemorrhage, diseases of the central nervous system involving vital organs, severe retinal and optic nerve lesions, diabetes, gastric ulcer, advanced pulmonary disease (except tuberculosis), advanced renal disease of non-syphilitic origin.

6. Dr. Rambaud, director of the New York Pasteur Institute, corrects a few popular misconceptions in regard to hydrophobia. The laboratory, he reminds us, can clear up a doubtful case within a few hours in ninety out of every one hundred instances. The Negri bodies, when present, prove in 199 cases out of 200 that the animal was rabid. Their absence means that with a probability of 90% the animal was not rabid. In such a case inoculation will settle the question within twenty days. The bite of a rabid dog is harmful to man in proportions varying from 10 to 90%, according to different conditions.

[L. D. C.]

### The Journal of the American Medical Association.

April 29, 1911.

1. *Heiser, V. G. *Practical Experiences with Beriberi and Unpolished Rice in the Philippines.*
2. *Kessel, L. *Relation of Premenstrual Fever to Pulmonary Tuberculosis. A Study of One Hundred Cases.*
3. Hamilton, A. *Lead Poisoning in Illinois.*
4. Churchman, J. W. *Value of Animal Experimentation, as Illustrated by Recent Advances in Study of Syphilis.*
5. Kress, G. H. *Convenient Table in Use of Tuberculins.*
6. Ravenel, M. P., and Frost, W. D. *Formation and Functions of Hygiene Committees for Universities.*
7. Donley, J. E. *Peripheral Neural Atrophy of the Thenar Muscles.*
8. Darling, S. T., and Connor, R. C. *A Case of Oriental Sore (Dermal Leishmanosis) in a Native Colombian.*
9. Stremsky, M. *Miniature Exercise Machine for Infantile Paralysis.*
10. Carter, W. W. *Transplantation of Bone for Correction of Depressed Deformities of the Nose. Report of Cases.*
11. Buckle, L. *Potassium Permanganate as a Hemostatic.*
12. Gilbert, G. B. *Unusual Idiosyncracy to Aspirin.*
13. Corbus, B. C. *Cause of the Immediate Pain and Abscess Following the Administration of Salvarsan by the Alkaline Solution Method.*

1. The advances made during the past year in placing the etiology of beriberi on a scientific basis have now proceeded far enough to warrant the inference that prophylactic medicine has the knowledge at its command to place this scourge among the preventable diseases. It has been found that polished rice or that from which the pericarp has been largely or wholly removed is a large factor in the production of beriberi. This polished rice contains only 0.4 of phosphorus pentoxid, while the unpolished rice contains from 0.5 to 0.75 of the phosphorus and is a beneficial diet. It is thought that the total exclusion of polished rice will almost entirely stamp out beriberi in the districts where rice is the staple article of food and where meats are not eaten.

2. Kessel believes that far too great stress has been laid on the incidence of premenstrual fever in tuberculosis.

He found only two cases in one hundred. This is contrary to the reports found in literature. [E. H. R.]

JOURNAL OF EXPERIMENTAL MEDICINE.

APRIL 1, 1911.

1. *ROUS. *A Sarcoma of the Fowl Transmissible by an Agent Separable from the Tumor Cells.*
2. STRONG, R. P. *The Treatment of Yaws (Frambesia) with Arsenobenzol (Salvarsan).*
3. CARREL, A., AND BURROWS, M. T. *Cultivation in Vitro of the Thyroid Gland.*
4. RUTH, E. S. *Cicatrization of Skin in Vitro.*
5. OTTENBURG, R. *Studies in Iso-agglutination. I. Transfusion and the Question of Intravascular Agglutination.*
6. COOKE, J. V. *Changes in Nitrogenous Metabolism after Parathyroidectomy.*
7. MARINE, D., AND LENHART, H. *Further Observations and Experiments on the So-Called Thyroid Carcinoma of the Brook Trout (Salvelinus Fontinalis), and Its Relation to Endemic Goitre.*

1. Rous has succeeded in transmitting a sarcoma of the chicken by the injection of a cell-free filtrate of the tumor which had been passed through a Berkefeld filter of medium size. The original tumor possessed all the characteristics of a true malignant neoplasm both in morphology and in behavior. The original tumor in the chicken produced extensive metastases. The tumors produced by the cell-free filtrate were of distinctly slower growth than the tumors produced by the usual implantation. In some instances, in addition to the growth at the site of inoculation, metastases were found after the injection of the tumor filtrate. Rous presents two hypotheses: (1) That the cell-perpetuating agent in this sarcoma is a minute parasitic organism; and (2) that the tumor is caused by some chemical stimulant. The article with the accompanying plates is very convincing and contributes an extremely important piece of evidence in the study of the etiology of malignant disease. [R. I. L.]

BULLETIN OF THE JOHNS HOPKINS HOSPITAL.

APRIL, 1911.

1. *THAYER, W. S. *Clinical Notes. (1) Intermittent Fever in Influenza Simulating Malarial Fever. (2) Grave Malarial Fever with Fever Parasites in the Peripheral Circulation. Dangers of Intravenous Injection of Quinine.*
2. BANZHOF, E. J. *The Preparation of Antitoxin.*
3. WINTERNITZ, M. C. *The Clinical Value of the Determination of the Catalytic Activity of the Blood.*
4. HANSON, H. *Distoma Pulmonale in Wisconsin.*
5. *BUNTING, C. H. *Blood Platelets and Megalokaryocytes in Hodgkin's Disease.*
6. CHURCHMAN, J. W. *Primary General Peritonitis with Isolation of the Bacillus Lactis Aerogenes in Pure Culture from the Peritoneal Exudate.*
7. ROSENHEIM, S. *The Submucous Resection of the Nasal Septum, Technic and Results in the Writer's Practice.*
8. LEWIS, M. R., AND LEWIS, W. H. *The Growth of Embryonic Chick Tissues in Artificial Media, Agar and Bouillon.*

1. Thayer gives some interesting clinical experiences and the details of some cases of influenza and malaria, with comments. The title of the paper explains the subject matter.

5. Bunting has studied the question of blood platelets as found in Hodgkin's disease and confirms Wright's investigations as to their origin. There is an excellent plate. [J. B. H.]

THE LANCET.

MARCH 25, 1911.

1. *BOYCOTT, A. E. *The Milroy Lectures on Ankylostoma Infection. Lecture II.*
2. *GODLEE, R. J. *Myositis Ossificans Traumatica.*
3. *MAKINS, G. H. *On Traumatic Myositis Ossificans.*
4. *BOWLBY, A. A. *The Formation of Bone in Periosteum Separated by Injury.*
5. SMITH, F. J., AND CANDY, H. *A Case of Poisoning by Tragopogon Pratense or Goat's Beard.*
6. *MACDONALD, A. G. *A Record of Ninety Diphtheria Carriers.*
7. PRICE, F. W., AND LEAKEY, A. B. *Grave and Prolonged Cardiac Failure Following the Use of Cocaine in Dental Surgery.*
8. MACEWEN, J. A. C. *Two Uncommon Forms of Deformity of the Female Generative Organs, one Causing Symptoms Simulating Intestinal Obstruction.*
9. HUTCHINSON, J. *Nuchal Lipomata in the Lower Animals.*
10. MUNRO, W. T. *Clinical Aspects of Some Varieties of Excitement.*
11. HIRSCH, C. T. W. *Motoring Notes.*

1. In the second of the Milroy Lectures, Boycott, in an interesting way, discusses the diagnoses of ankylostoma infection with special reference to the eosinophilia as here found compared with the same phenomenon in other parasitic affections. He then discusses the conditions which determine the prevalence of ankylostoma infection, oxygen, warmth and moisture, with relation to these conditions as found in the Cornish mines.

2, 3, 4. Godlee, Makins and Bowlby, in three short separate articles, briefly describe cases of injury to the periosteum, following trauma, which was followed by the formation of bone in the periosteum.

6. Macdonald has made a study of eighty diphtheria carriers. The control of this disease depends on the control of the carrier in his opinion; due quarantine of the carrier should be rigidly enforced regardless of age, sex or other conditions until the organisms have entirely disappeared. [J. B. H.]

APRIL 1, 1911.

1. *BOYCOTT, A. E. *The Milroy Lectures on Ankylostoma Infection. Lecture III.*
2. ROBINSON, G. M. *The Morison Lectures on Insanity, Melancholia, the Depressive Phase of Manic-Depressive Insanity. Lectures I, II and III.*
3. SHERREN, J. *The Diagnosis of Gallstones.*
4. ROBERTSON, JANE I. *Congenital Abnormality of the Heart; A Case of Cor Triloculare Biatriatum.*
5. *HUTT, C. W. *Slight General Enlargement of the Thyroid Gland as found in School Children.*
6. COLES, A. C. *The Fading of Aniline-Stained Microscopical Preparations.*
7. BOTT, S. *Extensive Blistering Occurring in an Infant; Diagnosis of Scurvy.*
8. *GRÜNBAUM, H. S., AND GRÜNBAUM, A. S. *Some Experiments on the Inhibition of Tumor Growth in Rats and Mice, with a Suggestion for an Empirical Treatment in Man.*

1. In the third lecture on ankylostoma infection, Boycott discusses treatment and prophylaxis. He observes that it is easy to cure a man of ankylostomiasis but extraordinarily difficult to cure him of ankylostoma infection. Most patients will markedly improve on getting rid of a constant source of infection. Four drugs are commonly used — thymol, B naphthol, eucalyptus oil and male fern. The Porto Rico Commission in treating 300,000 cases discarded male fern as useless, eucalyptus as too nauseating and B naphthol as dangerous in that it sometimes caused a fatal nephritis in already diseased kidneys. One or two doses of thymol will usually restore a man to such a degree of health that he feels quite well and able to work, though in many such a residuum of worms will still be present in the bowel. He goes on to describe the measures taken in the mines in Westphalia, Germany, and the results obtained, and also the steps taken in Belgium, Cornwall and the tropics, presenting many statistical tables.

5. Hutt, in examining large numbers of school children from the age of seven to fifteen years, found a slightly enlarged thyroid in 99 out of 3,982 cases. He comments briefly on these findings, but draws no definite conclusions.

8. The writers were able to cause regression of inoculated new growths in rats by injections of serum from a horse suffering with epithelioma. They also found that it was not possible simultaneously to produce immunity against cobra venom and to retain susceptibility to new growth inoculation in mice and rats, or conversely, after

successful inoculation with tumor, to produce immunity to cobra venom. If the tumor were already present the animal succumbed to sublethal doses of cobra venom, and, conversely, in those animals in which immunity to the venom could be established, growths which had already reached a size of 1 cm. in diameter would regress. Continuing this, they experimented with antivenom injections in animals inoculated with caries as to the ratio of tumor weight to body weight at which it was possible to cause regression. [J. B. H.]

April 8, 1911.

1. *Mackenzie, J. *The Oliver Sharpey Lectures on Heart Failure. Lecture I.*
2. *Freyer, P. J. *A Recent Series of Two Hundred Cases of Total Enucleation of the Prostate.*
3. *Raw, N. *The Treatment of Pulmonary Tuberculosis with Bovine Tuberculin.*
4. *Robertson, W. S. *Acute Inflammation of the Thyroid Gland.*
5. Gadd, D. W. *How Far can the Abuse of Drugs be Prevented by Law?*
6. Harnett, W. L. *An Unusual Case of Bullet Wound of the Skull.*
7. Thomas, J. L. *The Eye of Surgical Needles; a New Form.*

1. *Cf. British Medical Journal*, April 8, 1911.

2. Freyer comments on a series of 200 cases of total enucleation of the prostate in which there were only 9 deaths, a mortality of 4.5%.

3. Raw has come to the conclusion that human and bovine phthisis are antagonistic in the human body and that children who have suffered from bovine tuberculosis in the form of glands, joints, etc., are immune against consumption and that persons who have developed consumption are immunized against the surgical forms of the disease. He supports this theory on the ground that Von Behring, in producing immunity against tuberculosis in cattle, could only do so by using the human strain of bacilli. Raw's results in treating pulmonary tuberculosis with human tuberculin, Koch's T. R., have been very disappointing; recently he has been using a form of bovine tuberculin with much better results. He describes his cases, 28 Stage I, 65 Stage II and 15 Stage III, 108 in all. He started in with 1-10000 mgm. and gradually increasing up to the maximum dose of 1–100 mgm., never exceeding this dose. He uses along with this treatment the regular hygienic measures ordinarily used. Of the 28 first stage cases, 18 are arrested; of the 65 second stage cases, 41 are apparently cured, 16 relapsed, 3 progressing and 5 have died; of the 15 third stage cases, 3 have recovered. He believes that tuberculin is a valuable aid to the other methods of treatment but must be used with great care and discrimination.

4. Robertson describes in detail 3 cases of acute inflammation of the thyroid gland. Such cases fall into two classes: (1) in which the gland was previously normal and (2) in which the gland was already goitrous. Out of 96 cases he has collected, in 33, or 34%, the gland was already enlarged. He describes epidemics of this condition. Of the etiology, little is known. The symptoms vary according as the inflammation of the gland is a primary infection or arises in the course of some pre-existing disease, such as pneumonia, rheumatic fever or typhoid. Cases terminate by resolution or go on to suppuration or rarely gangrene. The usual duration is fourteen days. In 27 of the 41 cases in which suppuration occurred there was a pre-existing goitre. The condition must not be confused with (1) simple parenchymatous enlargement; (2) adenitis and cellulitis of neighboring parts; (3) sudden hemorrhage into a cystic thyroid and (4) malignant disease. [J. B. H.]

British Medical Journal.

April 1, 1911.

1. *Moynihan, B. G. A. *An Address on the Acute Emergencies of Abdominal Disease.*
2. Moore, B. *The Chemical Composition and Mode of Formation of Renal Calculi, and the Metabolism of Calcium in Gout and Allied Conditions.*
3. Cameron, A. F. *The Examination of Suspected Small-pox. Some Points of Practical Importance.*
4. *Fenwick, E. H. *A Lecture on Renography; or a Study of the Abnormal Movements of the Living Kidney, and a Hint of Its Bearing and Influence upon Renal Surgery.*
5. Mitchell, W. *Anthrax and Fatalism.*
6. Balfour, A. *The Infective Granule in Certain Protozoal Infections as Illustrated by the Spirochetosis of Sudanese Fowls.*
7. Sawyer, J. *Note on the Therapeutics of Sugar.*
8. Dawkin, G. M. *The Cardigan Cancer Cures.*

1. Moynihan does not believe that the so-called acute abdominal emergencies are really acute, but are due to factors which have been in existence already some time, and that the acute emergency can usually be prevented by timely recognition of the value and significance of early signs and symptoms.

4. Fenwick demonstrates by means of x-ray plates of kidneys containing stones, the limits of motion of the normal kidney. The knowledge of the presence or absence of such motion is of great value to the surgeon in making both diagnosis and prognosis. He discusses in some detail the significance of such movements, and their absence. [J. B. H.]

April 8, 1911.

1. *Mackenzie, J. *The Oliver-Sharpey Lectures on Heart Failure. Lecture I.*
2. Schäfer. *An Address on Antivivisectionists and the Research Defense Society.*
3. Robertson, G. M. *Some Medico-Legal and Practical Considerations Relating to Melancholia.*
4. *Butler, T. H. *The Etiology of Iritis.*
5. Bennett, H. P. *A Few Points on Some Common Affections of the Eyes.*
6. Mamourian, M., and Smith, C. J. *The Mechanical Etiology of Optic Neuritis.*
7. Gibbs, C., and Calthrop, E. S. *The Curative Effect of Salvarsan Serum in a Case of Syphilis.*

1. Mackenzie, in the first of the Oliver-Sharpey Lectures, discusses the popular conception of heart failure and its associated phenomena usually explained by "back pressure." He speaks of the undue significance given to murmurs, and explains how both tricuspid and mitral insufficiency may be associated with well-functioning hearts and be signs of good rather than bad cardiac action; he emphasises the harmlessness of mitral insufficiency. He then discusses cardiac irregularity and shows of how little value it is as a sign of cardiac incompetency. The real test of the significance of murmurs and irregularities is the fact that they are often found in a man leading an active and strenuous life over a long period. He goes over the same ground in organic murmurs and irregularities. He discusses the "back pressure" theory and what he considers the essential causes of heart failure which are to be found in the heart muscle.

4. Butler, in 100 cases of iritis, found syphilis the cause in 22% and oral sepsis the cause in 12%. This latter he urges attention to as a much neglected factor. In at least 30% of cases it was impossible to ascertain the real cause. Tuberculosis, as a cause, he found present in less than 5% of cases. He does not confirm the views of others that 70% of all cases of iritis are due to syphilis. [J. B. H.]

Edinburgh Medical Journal.

April, 1911.

1. *Walker, N. *On the Treatment of Lupus Carcinoma.*
2. Langwill, H. G. *The Medical Examination of Employees.*
3. Dundas, J. *A National Medical Service.*
4. Caird, F. M. *A Discussion on Duodenal Ulcer.*

1. Walker briefly describes his experiences in the treatment of lupus carcinoma with curettage, chromic acid, carbon dioxide snow, x-ray, etc. There are some excellent illustrations. [J. B. H.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 14.

APRIL 6, 1911.

1. EWALD, C. A. *Diagnosis and Treatment of Intestinal Ulcer.* (Clinical lecture.)
2. *KOENIG, F. *Phlegmon of the Stomach Wall in the Subacute Stage and Cure by Resection of the Stomach.*
3. LEWY, H., AND LEWY, F. H. *A Case of Subacute Disseminated Myelitis after Recurrent Endocarditis.*
4. SALOMOWSKI, M. *The Sedative Action of Adalin in Sexual Neurasthenia and Other Sexual Diseases.*
5. KANERA, F. *Herpes Zoster and Renal Colic.*
6. KARO, W. *The Combined Treatment of Gonorrhea.*
7. HEINRICH, A., AND TATARSKY, A. *A New Injection Syringe for Intramuscular Salvarsan Treatment.*
8. GEYER, L. *Arsenic Necroses.*
9. *CHRISTOMANOS, A. *Cases of Kala Azar in Greece.*
10. SYLLA, B. *The Application of $H_2O_2$ as a Salve.*
11. CHRISTEN, T. *The Logarithmic Differential Manometer, a New Apparatus for Physiologic and Clinical Measurements of Pressure.*
12. BIEBER, A. *The Permeability of Glass for Ultraviolet Rays.*
13. SCHALL, M. *Technical Novelties in the Domains of Medicine, Public Hygiene, and Care of the Sick.*

2. Koenig reports an interesting case of diffuse inflammation of the stomach wall which had been running a subacute course. At the time of operation there were many adhesions and small pockets of acute inflammation. As it seemed inevitable that an hour-glass stomach would result he decided upon resection with favorable results.

9. Christomanos describes the occurrence of kala azar in Greece and endeavors to show the relation between that disease and the rare blood conditions with big spleens, such as Banti's disease. These cases which are like Banti's disease in children he thinks are especially apt to be kala azar. He shows one picture of the parasites, and mentions their use of atoxyl in the treatment. In one case they used salvarsan and on splenic puncture two days later found the parasites still plentiful in the spleen pulp. [C. F., JR.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 14.

APRIL 4, 1911.

1. HERING, H. E. *The Diatheses and Dyscrasias in the Light of Scientific Knowledge.*
2. *SCHADE, H. *Contributions to the Formation of Concretions. II.*
3. ARNSPERGER, L. *The Origin of Pancreatitis with Gallstones.*
4. CAAN, A. *Complement Fixation in Carcinoma.*
5. BENARIO, J. *Statistics and Treatment of Neuro-Recurrence under Treatment with Salvarsan.*
6. ALWENS. *Instantaneous Roentgenology.*
7. BENNECKE. *The Confirmation of the Rumpel-Leede Phenomenon in Scarlet Fever.*
8. RUPPRECHT. *Culpable Youth and Psychopathic Feeblemindedness.*
9. SCHUBERT, G. *The New Method of Treating Essential Pruritus Vulvæ and Other Sacral Neuroses.*
10. EISENGRÄBER. *Sugar and Albumin in the Urine Following an Infected Wound of the Head.*
11. v. JAKSCH, R. *Urobilinogenemia.*
12. SIEGERT, F. *Methods of Using Buttermilk for Sick Children.*
13. STRAUSS, A. *"A Tube for Treatment with Carbon Dioxide Snow."* Reply to Dr. Kuznitzky.

2. Schade ends in this number a long and careful article on the formation of concretions. He reaches many interesting conclusions, as follows: The first and commonest kind of stone is formed in layers. The origin of such stones is dependent on the presence of a colloid precipitate. Certain colloids, as fibrin, precipitate in layers. If there is also present a free body in suspension, then these layers will be concentric. When, with these colloids, a crystalline substance comes down, the layer formation will predominate. The simple layer formation is primary, and is followed by more or less definite radiating, crystalline striations. This group of body stones includes the urinary, the salivary, the pancreatic, the intestinal, the inflammatory bilirubin-lime stones of the bile, and also the prostatic and many joint calculi.

The cholesterin stone is peculiar in that it is formed by the confluence of droplets, and subsequent crystallization, and that it has a radiate structure.

For the formation of all the layer stones, the colloids and crystalloids are essential factors.

7. The Rumpel-Leede phenomenon is a tendency to hemorrhage into the skin, which can be demonstrated by putting a Riva-Rocci cuff around the arm and producing a pressure of 45–60 mm. of Hg. for five to ten minutes. The writer supports Leede in the statement that a negative result speaks against scarlet fever, but that a positive one does not indicate much because it occurs in many other diseases. [G. C. S.]

WIENER KLINISCHE WOCHENSCHRIFT. No. 5.

FEB. 2, 1911.

1. WEICHSELBAUM, A. *The Changes of the Pancreas in Diabetes Mellitus.*
2. ZÖRKENDÖRFER, K. *The Behavior of Albuminuria and Cylindruria during the Marienbad "Cure."*
3. BUETTNER, W. *A Symptom in a Case of Hysteric Pseudotetany Resembling in Its Clinical Appearance the "Leg Phenomenon" of True Tetany, and Perhaps More Properly to be Designated as "Pseudo-Leg-Phenomenon."*
4. *MÜLLER, R., AND HOUGH, W. H. *Comparative Globulin Measurements in Luetic Sera.*
5. HERMANN, A. *The Question of Epithelial Metaplasia.*

4. The authors have made a series of globulin determinations in fifty-eight cases of syphilis, or suspected syphilis, to determine, if possible, whether there is an increase of the total globulin in lues, what globulin fraction is chiefly altered quantitatively, and what is the relation of quantitatively measurable globulin changes to the Wassermann reaction. These questions, they consider not satisfactorily answered, but deserving of further investigation. [R. M. G.]

NO. 6. FEB. 9, 1911.

1. KRAUS, R., AND v. GRAFF, E. *The Effects of Placental Serum and of the Serum of Pregnant Patients on Human Carcinoma Cells.*
2. GREKOW, I. I. *The Question of the Reciprocal Relations between Inflammatory Diseases of the Vermiform Appendix and of the Fallopian Tube, with Special Reference to Perforation of the Appendix into the Tube.*
3. *FLINKER, A. *The Body Proportions of Cretins.*
4. GJORGJEVIC, G. *Contribution to the Knowledge of the Steptothrix Diseases of Man.*
5. WIENER, E. *Quarantine Studies.*

3. From comparative measurements of cretins and normal men, Flinker finds the former to have relatively large heads, short necks, long body and very short legs. This peculiarity indicates persistence on a lower plane of evolution, dependent on inhibition of skeletal growth in childhood. [R. M. G.]

## Obituary.

### HERMAN KNAPP, M.D.

DR. HERMAN KNAPP, the Nestor of New York ophthalmologists, died from pneumonia at his home at Mamaronack, Westchester County, N. Y., on April 30, in the eighty-first year of his age. He was a native of Dauborn, Prussia, and was graduated from the University of Giessen in 1854. From 1864 to 1868 he was professor of ophthalmology at the University of Heidelberg, and while in this position founded the first University Eye and Ear Hospital at Heidelberg. At the time he came to this country (1868) he was considered in Germany as second in his special department only to Von Graefe. In New

York, in 1869, he founded his *Archives of Ophthalmology and Otology*, a journal published both in English and German. Ten years later this was divided into two separate journals. He also founded the New York Ophthalmic and Aural Institute, to which hospital he remained chief surgeon until 1908, when at his request he was made consulting surgeon. Dr. Knapp's international reputation at once gave him a position among the leading ophthalmologists of the United States, and until comparatively recently he labored with great assiduity both in his private and public practice, as well as in his medical literary work, where his contributions were always of great practical value. He was author of a work on "Intra-Ocular Tumors," and of many papers on topics in ophthalmic and aural surgery. Successively he occupied the chair of ophthalmology in the New York University Medical College and the College of Physicians and Surgeons, and 1902 became professor emeritus in the latter. Of late years he had been gradually giving up some of his activities, and in 1910 he definitely retired. He is survived by two married daughters and a son, Dr. Arnold Knapp, who for some time has been executive surgeon of the Ophthalmic and Aural Institute.

## Miscellany.

### EUGENICS: MEETING OF SECTION OF AMERICAN BREEDERS' ASSOCIATION.

The conference of the Research Committees of the Eugenics Section of the American Breeders' Association has just closed a two days' session held at the Monson State Hospital, Palmer, Mass. Dr. W. N. Bullard, chairman of the board of trustees, is also chairman of the section on inheritance in epilepsy. He presided at these meetings. A good number attended from near by and from a distance. Many of these persons are the most prominent in their lines in this country, and much interesting information was given. Such an opportunity as this does not often occur and those who failed to attend have certainly missed a rare chance. Introductory remarks were made by the presiding officer, and the report of the committee on inheritance in epilepsy was read by Dr. Flood. Dr. Carmalt, of New Haven, gave the experience in the enactment and enforcement of the law in Connecticut relating to sterilization. Dr. Ross, the superintendent of the new institution for epileptics located in Mansfield, Conn., gave a short address. Dr. Rosanoff, of the Kings Park State Hospital, read a paper on "Further Studies on Inheritance in Epilepsy." These reports were discussed by Dr. Scribner, of the Worcester State Asylum. A summary was read of the recent report of the commission appointed by Governor Draper to investigate the question of the "Increase of Criminals, Mental Defectives, Epileptics and Degenerates." This report is one of great moment and gives much encouragement from the fact that no positive increase in the number of these defective classes is shown. It is impossible to go into this in detail, but sufficient commendation cannot be given to the method the commission has adopted. Twenty recommendations are made, which are summarized on the last page of the report, and these twenty recommendations are of such consequence that they might well form a test for every state in the Union to study and act upon during the next generation. Dr. E. E. Southard, the pathologist of the State Board of Insanity and Bullard professor of neuropathology in the Harvard Medical School, read the report of the Committee on "Heredity in Insanity," of which Dr. Adolph Meyer is the chairman. Dr. Davenport presented a paper on "Relation between Geographical Isolation and Consanguineous Marriage," with illustrations from New England. Dr. Estabrook gave an account of the degeneracy in Guilder Hollow, a remarkable illustration of the effects of geographical barriers upon degeneracy. Dr. David F. Weeks, superintendent of the New Jersey State Institution for Epileptics, reported the methods that were being studied so as to give uniform plans for charting all cases of degeneracy. This has proved a very difficult subject, but has now developed to such an extent that the Eugenics Record Office will soon issue a bulletin giving the present state of knowledge. These may be obtained by communication with Dr. C. B. Davenport, secretary, Cold Springs Harbor, N. Y. Dr. Henry L. Goddard, director of the research work in the training school at Vineland, N. J., contributed to many of the discussions and read a most interesting paper on the working out of the Binet test in determining the actual age and attainments of children. This test has been applied to thousands of feeble-minded as well as to many thousands of normal children. Mr. Johnston, the superintendent of Vineland Training School, gave his experiences with feeble-minded children. Mr. H. H. Laughlin, the superintendent of the Eugenics Record Office, gave an account of the record work. Dr. McGaffin, pathologist at the Taunton State Hospital, gave a paper on "The Presentation of a Family Pathography." Dr. Houston, of the Northampton State Hospital, discussed some of these papers. Miss Florence Danielson, the social worker of the Monson State Hospital, gave an account of her work. Mr. L. B. Alford, the research officer and pathologist of the Monson State Hospital, gave a most interesting demonstration and discourse on "Inheritance in Epilepsy after the Brown-Séquard Method," with some very remarkable conclusions. The field workers of the different institutions each gave her experience in her own particular field of labor. Dr. Van Nuys, of the Institution for Epileptics in Indiana, discussed the papers. Dr. Mitchell, the superintendent of the Danvers State Hospital, discussed very interestingly several points in the papers. Dr. Provost also participated in the discussion. Dr. Woods, of Harvard University, gave an interesting paper on "Degeneracy among Royalty."

## IN MEMORIAM: DR. PERCY D. LITTLEJOHN.

WE, the members of the New York Urological Society of the American Urological Association, assembled at our stated meeting, this day, April 5, 1911, record with deep sorrow the death of our fellow member, Dr. Percy D. Littlejohn, of New Haven, Conn.

Dr. Littlejohn has been a member of this society for seven years, during which time he has made many friends through his genial and attractive personality. He was a hard student, a close observer and was possessed of the true scientific spirit. These attributes, together with the high character of his work, have made him known and respected by all of the members of this association.

We feel that Dr. Littlejohn's untimely death has deprived us of a sincere friend and a most able fellow worker and that his death is a great loss to our association as well as to the profession in general.

*Resolved:* That we express our heart-felt sympathy to his sorrowing and bereaved family.

*Resolved:* That a copy of these resolutions be sent to the family of the deceased; to the *American Journal of Urology;* the *New York Medical Journal;* the *Medical Record;* and the BOSTON MEDICAL AND SURGICAL JOURNAL.

RAMON GUITERAS, M.D.,
COLIN LUKE BEGG, M.D.,
CLARENCE R. O'CROWLEY, M.D.,
*Committee.*

## Correspondence.

### APPLICATION OF IODINE TO TONSILS.

BOSTON, May 2, 1911.

*Mr. Editor:* Your Paris correspondent "S.," in his last letter upon the uses of iodine as an antiseptic, states that this substance should be of value in the treatment of tonsillar affections. As most of his writings are in advance of the times, I hasten to appraise him of the fact, which, however, he seems to have discovered, that iodine in any solution is useless as a remedy for local use upon tonsils. My own experience with local medicaments compels me to affirm that only those substances which have the property of uniting with the "albuminous" tissues the silver salts and iron solutions can remain long enough upon "tonsils" to do any good. I would recommend Dr. "S." to make use of a solution of iron alum (Fer et Amm. Sulph.) in the nasopharynx and especially over the "Luschka" or first tonsil. I must, however, warn him to watch the kidneys in most acute infectious diseases when doing this.

Very truly yours,
EDMUND D. SPEAR, M.D.

## SOCIETY NOTICES.

AMERICAN SOCIETY OF TROPICAL MEDICINE. — The eighth annual meeting will be held in New Orleans, May 18 and 19, 1911. The morning session of May 19 will be ushered in by a clinic on pellagra at the Charity Hospital. After this the regular scientific session of the society will be held in Hutchinson Memorial of Tulane University. On Saturday, May 20, an excursion is being planned to the Leper Colony.

JOHN M. SWAN, M.D.,
*Secretary.*

NEW ENGLAND HOSPITAL MEDICAL SOCIETY. — The New England Hospital Medical Society will hold its regular monthly meeting at Kensington Building, Boylston Street, May 18, at 7.30. Section on Pediatrics. Subjects: "Review of the Salt and Sugar Fevers of Early Infancy," Dr. Edith Hale Swift. "Prophylaxis of Child Life," Dr. Henry I. Bowditch.

MARGARET L. NOYES, *Secretary,*
32 St. James Ave., Boston.

ESSEX SOUTH DISTRICT MEDICAL SOCIETY. — The annual meeting of the society for the election of officers, and for such other business as may legally come before it, will be held at the Essex House, Salem, Friday, May 12, 1911. Dinner will be served at 7 o'clock. The guest of the evening will be Dr. John Lovett Morse, of Boston, who will read a paper on "Meningitis in Infants."

WALTER G. PHIPPEN, M.D., *Secretary.* GEORGE H. GRAY, M.D., *President.*

## RECENT DEATHS.

DR. HENRY GARRETTSON SPOONER, who died of cerebral hemorrhage at Boston on May 1, was born in this city in 1871. He received the degree of A.B. from Harvard in 1894 and that of M.D. in 1897. After practicing for a few years in Boston, he went to New York City, where he later became the first editor of the *American Journal of Urology.* He was a member of the New York State Medical Society, of the Medical Association of the Greater City of New York, and formerly a Fellow of The Massachusetts Medical Society.

DR. CLIFTON ELLIS WING, who died on May 1 in Jamaica Plain, was born in this city in 1848, the son of a physician. He received the degree of M.D. from Harvard in 1872 and served during the same year as interne at the Boston City Hospital. He practiced medicine in Boston for many years. He was a Fellow of The Massachusetts Medical Society. He is survived by his widow.

## BOOKS AND PAMPHLETS RECEIVED.

Treasury Department. Public Health Reports No. 58. The Typhoid Bacillus Carrier; A Review. By R. M. Grimm.

The Personal or Business Side of a Doctor's Life. By J. MacDonald, Jr. Reprint.

Bulletin of the Ayer Clinical Laboratory of the Pennsylvania Hospital, Philadelphia.

Hyoscine Hydrobromide as an Adjunct to Cocaine Anesthesia and as a Preventive to Cocaine Poisoning. By Myron Metzenbaum, B.S., M.D. Reprint.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, APRIL 22, 1911.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | 1,628 | 542 | Waltham | 5 | 2 |
| Chicago | 660 | 182 | Brookline | 5 | — |
| Philadelphia | — | — | Chicopee | 12 | 5 |
| St. Louis | — | — | Gloucester | 4 | 1 |
| Baltimore | — | — | Medford | 4 | 1 |
| Cleveland | — | — | North Adams | 10 | 4 |
| Buffalo | — | — | Northampton | 11 | 3 |
| Pittsburg | — | — | Beverly | 11 | 1 |
| Cincinnati | — | — | Revere | 5 | 1 |
| Milwaukee | — | — | Leominster | 2 | — |
| Washington | — | — | Attleboro | 8 | 3 |
| Providence | — | — | Westfield | 10 | — |
| Boston | 258 | 75 | Peabody | — | — |
| Worcester | 41 | 9 | Melrose | — | — |
| Fall River | 50 | 23 | Hyde Park | 5 | 1 |
| Lowell | 25 | 6 | Woburn | 5 | 1 |
| Cambridge | 42 | 11 | Newburyport | 3 | 1 |
| New Bedford | 36 | 15 | Gardner | 6 | 1 |
| Lynn | 23 | 5 | Marlboro | 4 | 1 |
| Springfield | 28 | 4 | Clinton | 6 | 1 |
| Lawrence | 23 | 12 | Milford | — | — |
| Somerville | 21 | 3 | Adams | 2 | 2 |
| Holyoke | 17 | 7 | Framingham | 2 | 0 |
| Brockton | 7 | 1 | Weymouth | — | — |
| Malden | — | — | Watertown | 5 | 1 |
| Haverhill | 14 | 2 | Southbridge | 6 | 3 |
| Salem | 19 | 5 | Plymouth | — | — |
| Newton | 9 | 2 | Webster | 4 | 0 |
| Fitchburg | 15 | 6 | Methuen | — | — |
| Taunton | 13 | 1 | Wakefield | — | — |
| Everett | 12 | — | Arlington | 3 | — |
| Quincy | — | — | Greenfield | 6 | 3 |
| Chelsea | 17 | 2 | Winthrop | 1 | — |
| Pittsfield | 14 | — | | | |

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Original Articles.

## MENINGITIS IN INFANCY.*

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MENINGITIS occurs with sufficient frequency in infancy to be well worth our serious attention and consideration. It is safe to say that 75% of the cases of tubercular meningitis occur during the first five years of life and that more cases occur during the second year than at any other time. Cerebrospinal meningitis is more common in childhood than in later life and is especially common in infancy.

When cerebrospinal meningitis is not epidemic, at least 70% of the cases of meningitis in infancy are tubercular. A large majority of the others are meningococcal in origin. It is true that meningitis in infancy is sometimes due to other organisms than the tubercle bacillus and the meningococcus. This happens so seldom, however, that if the symptoms of meningitis do not develop in the course of some other disease it is not necessary, for practical purposes, to consider in differential diagnosis anything but the tubercular and cerebrospinal forms. If the disease is due to some other organism, the symptoms are likely to resemble those of cerebrospinal rather than those of tubercular meningitis. In spite of the apparently better opportunities for the direct extension of suppurative processes from the middle ear to the meninges in infancy than in later life, meningitis from this cause almost never develops at this age.

Symptoms of meningeal irritation are very common in the course of many diseases in infancy, especially in those of the digestive tract, because of the great excitability of the nervous system at this time. When, however, such symptoms develop in the course of other diseases, the presumption is that they are not due to a complicating meningitis but that they are merely the manifestations of cerebral irritation from one cause or another. When the primary trouble is in the gastro-intestinal tract, the nervous manifestations are probably due to the action of toxic substances or high temperature on the brain; when there is severe diarrhea, the loss of fluid probably also plays a part in their production. When the primary trouble is pneumonia or some other acute disease accompanied by high fever, the symptoms are due to the action of toxins and of the fever together with probably a certain amount of cerebral congestion. The nervous symptoms are in many instances due to reflex irritation from a complicating otitis media. They are very seldom due to disease of the kidneys.

The diagnosis between meningitis and nervous symptoms due to cerebral irritation is usually easy when the fontanelle is open. The fontanelle is almost invariably bulging when there is meningitis. It is level or depressed when there is no meningitis. If the fontanelle does not bulge, the trouble is almost certainly not meningitis, although in rare instances the fontanelle is depressed throughout the course of meningitis. If the fontanelle does bulge, a diagnosis of meningitis is justified, the only exception being the bulging of the fontanelle which occurs in the somewhat hypothetical and, at any rate, extremely rare condition of serous meningitis. When the fontanelle is closed, the diagnosis is much more difficult, since the symptoms of meningitis and cerebral irritation may be exactly the same. The general rule still holds, however, that if the symptoms develop in the course of another disease they are in all probability not due to a complicating meningitis. A positive diagnosis can only be made, however, by means of a lumbar puncture. In general, whenever there is any question as to the presence or absence of meningitis, a lumbar puncture should be done. It is a harmless procedure, if performed in a cleanly manner. It is, moreover, not a difficult one and causes no more pain than an injection of antitoxin.

If symptoms of meningeal irritation develop *sui generis*, and a careful physical examination, including the ears, shows no cause for these symptoms, the chances are that the disease is meningitis. It must be remembered, however, that the symptomatology of meningitis in infancy is materially different from that in older children. The pulse and respiration are usually increased in rate, not lowered. Vomiting is more common both as an early and a late symptom. Explosive vomiting is uncommon. Constipation is the exception rather than the rule. Manifestations of pain are unusual. Convulsions are comparatively infrequent. Kernig's sign is inconstant. The knee-jerks are very variable. Ankle clonus is usually absent. Retraction and spasm of the abdominal muscles are almost never present.

It is almost certain, as has been already noted, that in such instances the disease is either tubercular or cerebrospinal. The diagnosis between tubercular and cerebrospinal meningitis at this age is a very difficult one. The rules which apply in older children and adults do not apply at this age. The onset of tubercular meningitis is often acute in infancy, while that of cerebrospinal meningitis is not infrequently slow. The temperature curves vary so much in both conditions that the course of the fever is of but little assistance. The symptomatology of the two conditions after symptoms of meningeal irritation and increased cerebral pressure have developed is practically the same, whatever differences there are being only in degree. On the whole, however, the symptoms of spinal and, to a less extent, of cerebral irritation are more marked in the cerebrospinal than in the tubercular form. Eruptions practically never occur in cerebrospinal meningitis in infancy. Their absence, therefore, does not count against the cerebrospinal form. Their presence is suggestive. The presumption is that, if the baby is less than three months old, the disease is cerebrospinal meningitis, not tubercular. The general condition of the baby is of no im-

*Read before the Waltham Medical Club, Feb. 2, 1911.

portance, because in the vast majority of instances of tubercular meningitis the babies are apparently in good heatlh, the meningitis being the first manifestation of a latent tuberculosis. It is the exception to find evidences of tuberculosis elsewhere.

The absence of a family history of tuberculosis or of a history of exposure to tuberculosis does not count in any way against tubercular meningitis. The history of tuberculosis in the family, when there has been no exposure to members of the family with tuberculosis, counts but little in favor of tubercular meningitis. A history of exposure to tuberculosis is, however, very strong evidence in favor of tubercular meningitis. Such a history can be elicited, if sufficient trouble is taken, in a large proportion of the cases of tubercular meningitis.

The examination of the blood is of some, but not of much, assistance in the differential diagnosis. There is an increase in the number of white corpuscles in almost all cases of cerebrospinal meningitis. There is no increase in most cases of tubercular meningitis. There is, however, a leucocytosis in enough of the cases of tubercular meningitis and little or no increase in enough of the cerebrospinal cases, so that the white count is not of great importance.

The tuberculin test is of some importance. If positive at this age it is strong, but not conclusive, evidence in favor of tubercular meningitis. If negative, it does not by any means exclude it, because this test is often negative in tuberculosis of the miliary type, to which, of course, tubercular meningitis belongs.

In the vast majority of cases a positive diagnosis can only be made by lumbar puncture. Lumbar puncture should be done, therefore, in every case, because if the condition is cerebrospinal meningitis it can be, in many instances, cured by the use of the serum, and because there is no danger in the operation if it is properly performed.

Lumbar puncture is not a difficult operation in a baby. The baby should be placed on its side on a hard surface to prevent lateral flexion of the spine. The spine must then be flexed in the lumbar region by an assistant. It does no good to bend up the knees and flex the chin on the chest if the lumbar region remains straight. When the spine is flexed the spaces between the lumbar spines are enlarged and the needle can be easily introduced. The needle is best introduced between the fourth and fifth lumbar spines. It should be pushed forward and a little upward. It is about 1½ inches into the spinal canal. Care should be taken not to go in too far because of the danger of wounding some vessel on the anterior wall of the canal and causing bleeding. The admixture of blood makes it impossible to tell whether the fluid is turbid or not and interferes to some extent with the microscopic examination of the fluid. There is no danger of a serious hemorrhage into the spinal canal, even if a vessel is wounded, since the bleeding stops as soon as the needle is withdrawn. A line drawn between the crests of the ilia passes through the fourth lumbar spine. There is no danger of wounding the cord at this age if the needle is introduced between the third and fourth spines, and probably none if it is put in between the second and third spines.

The normal cerebrospinal fluid runs out slowly, drop by drop, is perfectly clear like distilled water, does not deposit a fibrin clot on standing, usually contains very few and never more than twenty cells to the cubic millimeter, most of which are small mononuclear, and no organisms.

The normal cerebrospinal fluid contains from 0.05% to 0.1% of albumin; that in tubercular meningitis may contain as much as 0.3%, and that in cerebrospinal meningitis as much as 0.6%. It is, at any rate, always increased in meningitis and is an important point in differentiating between normal and abnormal fluids. A little practice enables one to appreciate any increase at once. Hemenway has recently called attention to the importance of the globulin test of Noguchi in this connection. She always found a positive reaction in meningitis and very seldom in other conditions. The test for a reducing substance with Fehling's solution is so inconstant that it is valueless.

The cerebrospinal fluid in tubercular meningitis is usually under increased pressure and runs out in a stream or in rapidly succeeding drops. It is usually slightly turbid, but may be perfectly clear. A fibrin clot is formed on standing. The fluid should not be considered normal, therefore, even if clear, unless no fibrin clot is formed after six or eight hours. It contains more than twenty cells to the cubic millimeter, usually from one hundred to two hundred. These cells are usually almost entirely small mononuclear, although in rare instances there may be as much as 20% or 30% of polynuclear cells. If the fluid is examined carefully enough, tubercle bacilli will be found in more than 90% of the cases. If it is examined hastily, they will almost always be missed.

The fluid in cerebrospinal meningitis is under increased pressure and usually runs out in a stream. It is turbid or purulent in appearance, forms a fibrin clot or a deposit of pus on standing and contains a great many cells to the cubic millimeter, usually several hundred. The great majority of these cells are of the polynuclear type. The type of cells gradually changes to the mononuclear in the cases which recover. The diplococcus intracellularis, a Gram-negative, biscuit-shaped diplococcus, is found in almost all cases, both within and without the cells.

The fluid in acute poliomyeloencephalitis unfortunately has in many instances the same characteristics as that in tubercular meningitis, that is, it is clear, often deposits a fibrin clot and contains more than twenty cells to the cubic millimeter, most of which are small mononuclear. If the search is careful enough, however, tubercle bacilli will be found in meningitis, but never in encephalitis. A careful study of the symptoms ought, however, to render a diagnosis possible.

*Tubercular meningitis.* — The most striking thing about tubercular meningitis is the irregu-

larity of the onset and early symptoms. No two cases begin in the same way. In some instances the onset is sudden, with very marked symptoms of meningeal involvement; in others it is slow and insidious. It is, however, certainly much more often sudden than is ordinarily supposed. The following histories illustrate very clearly the marked variability of the early symptoms in this disease.

A boy, twelve months old, had been perfectly well up to Feb. 22, when he vomited. The next day he was feverish and coughed considerably. He began to be stupid and to refuse his food Feb. 24. He had no convulsions, spasm or rigidity.

He was comatose when seen Feb. 26. There was no rigidity of the neck. The anterior fontanelle was slightly depressed. The pupils were much contracted. He held his arms and legs rigidly extended. The knee-jerks were equal and lively; Kernig's sign was absent.

A girl, twenty-one months old, began to vomit May 9, after eating chocolate creams. She was thoroughly cleaned out, after which the vomiting gradually diminished and stopped entirely May 17. The bowels became constipated. After May 12 she would sink down to the floor when playing and lie there quietly for a time. She seemed tender all over, so much so that scurvy was suspected. She began to be dull mentally the afternoon of May 19. The physical examination had always been negative. She was seen that night.

She was irritable when disturbed, but did not know where she was or take any notice. The neck was slightly rigid. The pupils were equal and reacted slowly to light. There was no spasm or paralysis of the extremities. The knee-jerks were equal and normal. Kernig's sign, the neck sign and the contralateral reflex were all absent.

A girl, seventeen months old, broke out with the measles Feb. 27. The eruption quickly faded. She began to be a little heavy March 1, and was more so on the 2d and 3d. She was somewhat nauseated on the 5th, but the next day seemed better and brighter, although she vomited. She vomited again on the morning of the 7th and seemed tender over one eye. Loss of power was noticed in the right leg about noon, and twitching of the left side of the face and left arm developed during the afternoon.

When seen that night she was unconscious, there was slight rigidity of the neck and the eyes were turned to the right. The pupils were dilated, equal and reacted slowly to light. There was constant twitching of the left side of the face and of the left arm. The knee-jerk was diminished on the right. Kernig's and Babinski's signs, as well as the neck sign, were absent.

A girl, twenty-one months old, had a cold in the head for several days, beginning Sept. 13. She had a convulsion Sept. 17, after which she seemed nearly well, although she vomited once or twice. There was a serous discharge from the right ear Sept. 24, which stopped in twenty-four hours. Slight spasm of the neck and back and internal strabismus then developed. She was seen Sept. 27.

She was conscious, but took very little interest. There was slight rigidity of the neck. The eyes were turned a little to the right, but the pupils were equal and reacted to light. There was no spasm or paralysis. The knee-jerks were equal and normal. Kernig's sign was absent.

A boy, twenty-seven months old, had had repeated attacks of recurrent vomiting. He began to be croupy April 1. He began to vomit April 3, without known cause and had continued to vomit every few minutes up to the time he was seen, April 6. The bowels had been a little constipated. He had coughed constantly. Physical examination had been entirely negative.

He was somewhat restless, but perfectly clear mentally. The physical examination showed no evidences whatever of meningeal or cerebral irritation, so that a diagnosis of recurrent vomiting was made. Definite signs of meningeal irritation appeared April 9.

A girl, thirty months old, lost her appetite and became a little feverish Feb. 20. Her throat was slightly reddened. Physical examination was entirely negative. Her appetite continued poor, but she did not vomit. There was a tendency to constipation. The temperature varied between 100° F. and 101° F. up to March 1, when it dropped to normal. The pulse was about 110 until March 1, when it dropped to 84. She began to be dull about Feb. 27. This dullness had increased up to the time she was seen, March 4.

She was quiet and took no interest in anything. There was slight rigidity of the neck. The pupils were widely dilated, but reacted slowly to light. The respiration was suggestive of the Cheyne-Stokes type. There was no spasm or paralysis. The knee-jerks were very much diminished. Kernig's and Babinski's signs were absent, as was the contralateral reflex. There was a suggestion of a neck-sign and marked vasomotor irritability of the skin.

It would be easy to multiply examples, all of them different, if it were necessary. In general, however, the early symptoms are referable to the digestive tract and suggest some gastric disorder. This being the case, tubercular meningitis should be thought of whenever a baby vomits without reasonable cause. In fact, in order to make an early diagnosis in every case of tubercular meningitis it would be necessary to mention it as a possibility whenever a baby vomited and, more than that, because of the variability of the early symptoms, whenever a baby was sick in any way. In this way only would no case be missed. Such a course would obviously be ridiculous.

The course of tubercular meningitis in infancy is, as a rule, much shorter than is ordinarily supposed. I have seen a number of cases in which the duration was not more than a week, and one in which it was only thirty-six hours. This patient was under treatment in the hospital for another disease and did not show any signs of meningitis before the acute onset. The diagnosis was confirmed by autopsy. Holt states, in a recent paper, that he has seen but one case in which the duration was as long as five weeks, and that in his experience the average duration in infancy is two and a half weeks. The cases of supposedly long duration are probably not tubercular meningitis, but the chronic form of cerebrospinal meningitis.

Almost every one thinks of tubercular meningitis as a disease constantly associated with rigidity, tenderness and retraction of the neck, opisthotonos, spasm of the extremities, paralysis or spasm of the eye muscles and convulsions. In my experience very marked symptoms of this sort are comparatively unusual. Only a few of them are present, as a rule, in any individual case. It is not uncommon, moreover, for the disease to run its course without any convulsions,

twitching or rigidity, the condition being one of flaccidity with diminished, or absent, reflexes. The following cases are examples:

A girl, fifteen months old, was taken suddenly sick May 13, with vomiting. This was soon followed by a convulsion. She then lapsed into a stuporous condition and took no food, but had no retraction of the head or rigidity. She was seen May 20.

She was then in a deep stupor. The pupils were much dilated, but reacted a little to light. The fontanelle was level, but tense. There was no rigidity of the neck. The respiration was Cheyne-Stokes in type. The abdomen was sunken, but not tense. There was no spasm of the extremities. The knee-jerks and Kernig's sign were absent. Her condition remained the same until her death, May 22.

A girl, four months old, had had a cough and vomited occasionally for two weeks. She was dull, but noticed a little. The fontanelle was bulging and very tense. The pupils reacted slowly to light. There was no rigidity of the neck, and no spasm or paralysis of the extremities. The knee-jerks were equal and normal. Kernig's sign was absent. She died three days later without having developed any spasm or rigidity.

Holt has recently called attention to the fact that tubercular meningitis is more common in infancy during the spring months than at any other time of the year. The most plausible

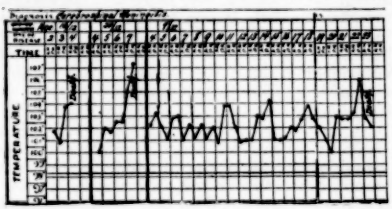



FIG. 1.

explanation of this fact is that pulmonary diseases are most common at this time of year and that they stir up latent tubercular processes in the bronchial glands.

Remissions in the symptoms are much less frequent in infancy than in later childhood. The disease in infancy usually progresses steadily from bad to worse.

Martin [1] has recently collected from the literature since 1894 20 cases of recovery from tubercular meningitis, in which he thinks the diagnosis is certain. Granting that he is justified in this belief, which is somewhat doubtful, this number of cases is so small in comparison with the number of cases of tubercular meningitis which must have occurred throughout the world in the last sixteen years that it does not justify anything but an absolutely hopeless prognosis in this disease. It seems to me that the chances of recovery are so infinitesimally small that it is unfair to hold out the slightest hope of recovery.

The treatment of this disease can, of course, be only symptomatic. It should be carried on, however, as if the baby was certain to get well, because there is always the possibility of a mistake in the diagnosis. The baby should be fed with a tube, if necessary. Bromide or opium in some form should be used to control pain and marked nervous symptoms. Repeated lumbar punctures to relieve the increased cerebral pressure have, however, been more useful in my experience than either bromide or opium. I have frequently seen a baby screaming with pain or having repeated convulsions become perfectly quiet and go to sleep after a lumbar puncture. This procedure has, of course, no curative effect, but does materially diminish the suffering both of the child and of the family.

*Cerebrospinal meningitis.* — Most of the types of cerebrospinal meningitis seen in adults occur in infancy. When the disease is allowed to run its course without being modified by the serum treatment the following types are easily distinguishable:

(1) The malignant or hyperacute, (2) the ordinary, (3) the mild or abortive, (4) the intermittent, (5) the chronic. Every one who has seen much cerebrospinal meningitis in infancy is familiar with all of these types. The most common of them, however, are a type midway between the malignant and the ordinary types and the chronic type. The mild or abortive cases are very uncommon. It hardly seems worth while to give the histories of cases of these different types. The following charts show in a general way, however, the duration and the course of the temperature in the different forms.

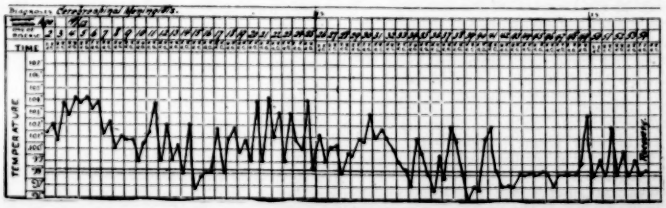



FIG. 2.

Sequelæ are not especially common after cerebrospinal meningitis in infancy when the serum is not used because very few babies live to have them. The most common of them is hydrocephalus, which often develops so early in

[1] Brain, 1909, vol. xxxii, p. 209.

the course of the disease that it deserves the name of complication rather than of sequela. It is not infrequently the cause of death, sometimes after a considerable period. It is due either to an ependymitis or to the mechanical closure of one or more of the foramina. Other sequelæ are spastic paralyses of various sorts from chronic lesions of the meninges, deafness, blindness and mental impairment. In a few instances which I have seen in infancy the mental condition has been almost maniacal. In others there has been a peculiar and persistent tremor.

The prognosis of cerebrospinal meningitis in infancy before the introduction of the serum treatment was practically hopeless, the mortality being between 85% and 100%. This has been materially changed, however, by the serum treatment. Flexner and Joblin, for example, report a mortality of 19 in 44 cases, or only 43%. One of their cases which recovered was only four weeks old.

When the serum is given, the prognosis depends very largely on how early the treatment is begun. The earlier it is begun, the better is the prognosis. Recovery is almost certain unless the disease is of the malignant type, if the treatment is begun within the first two or three days. Recovery sometimes takes place, however, even when the treatment is begun fairly late in the disease. It should always be tried in every case, therefore, no matter how long the duration. The earlier the treatment is begun, the less likely are there to be sequelæ. If begun late, sequelæ may appear as the result of damage done early in the course of the disease. Hydrocephalus is especially likely to develop later as the result of connective tissue formation due to injuries done in the first day or two of the disease.

The chief action of the serum is on the diplococci themselves. It limits their multiplication and causes their rapid death and disintegration. Phagocytosis is also stimulated and the organisms are rapidly taken up and digested. It is for this reason that there are no toxic symptoms from the rapid destruction of the organisms. Since the action of the serum is directly on the organisms themselves, it is very important to have it reach them in as concentrated a form as possible. The serum is so much diluted before it reaches the cerebrospinal fluid, when it is introduced subcutaneously or intravenously, that it is practically inert. It must, therefore, be introduced directly into the cerebrospinal canal. This is best done by lumbar puncture. As much cerebrospinal fluid as possible must be allowed to run off before the serum is introduced in order that it may not be diluted any more than is necessary and that it may reach the micro-organisms in as concentrated a form as possible. The connection between the ventricles and the spinal subarachnoid space is blocked in certain instances. This is shown by the failure to obtain fluid by lumbar puncture. When this happens it is, of course, impossible to get the serum into the ventricles by the lumbar route. In such instances it may be injected directly into the ventricles through the anterior fontanelle. Fischer[2] has recently treated several cases successfully in this way.

The action of the serum is best shown by the changes in the cerebrospinal fluid. Before the serum is given, the organisms are numerous, stain clearly and are both within and without the cells. After the serum is given, the organisms diminish in number and the extracellular organisms disappear. The organisms then stain poorly and the intracellular organisms disappear. The power of growth on culture media is lost before the organisms are entirely gone. At the same time the fluid becomes clearer and the cells stain less distinctly and show evidences of disintegration. The leucocytic formula also gradually changes from one almost exclusively polynuclear to the mononuclear type.

The successive examinations of the cerebrospinal fluid in the following instance demonstrate these changes very clearly.

The patient, a girl sixteen months old, had been ill about two weeks.

April 21. Lumbar puncture. Thirty cubic centimeters of very turbid fluid under moderate pressure were allowed to run off. This fluid formed a large clot, full of yellow pus. It contained a heavy trace of albumin. There were 95% of polynuclear leucocytes and 5% of endothelial cells. A few of the polynuclear cells contained typically arranged and shaped Gram-decolorizing intracellular diplococci, as well as a few extracellular organisms. The culture showed three small colonies of the meningococcus.

A second lumbar puncture was performed that afternoon and 7 ccm. of turbid fluid allowed to run off. Twenty cubic centimeters of the antiserum were injected.

April 22. Lumbar puncture. Fifteen cubic centimeters of rather less purulent fluid, under very low pressure, were allowed to run off. The fluid contained 74% of polynuclear and 26% of large mononuclear cells. The cells all took the stain perfectly. There were a few intracellular but no extracellular organisms. No growth appeared on cultures after forty-eight hours. Thirteen cubic cemtimeters of antiserum were injected.

April 23. Lumbar puncture. Ten cubic centimeters of slightly turbid fluid, under low pressure, were allowed to run off. There was no macroscopic pus. The fluid deposited a spider-web fibrin clot. It contained a trace of albumin. There were 55% of polynuclear and 45% of large mononuclear cells. Many of the cells were degenerating and the outline of the cells was not as clear as before. No organisms were seen and there was no growth on cultures. Fourteen cubic centimeters of antiserum were injected.

April 27. Lumbar puncture. Four cubic centimeters of almost clear fluid, under very low pressure, were allowed to run off. It deposited a very fine fibrin clot. One polynuclear cell, eight lymphocytes and eight endothelial cells were seen on one slide. There were no bacteria, and there was no growth on culture. Fifteen cubic centimeters of antiserum were given.

The serum should be given early in order to get the best results. If the fluid obtained by lumbar puncture in a case of meningitis is markedly turbid or purulent, the serum should be administered at once without waiting for the examination of the fluid. Time is gained in this

[2] Pediatrics, 1910, vol. xxii, p. 222.

way if it is cerebrospinal meningitis, as it probably is; no harm is done, if it is not. The serum should be given daily, and in severe cases twice daily, until the disease is under control. The best guide as to this point is the behavior of the cerebrospinal fluid. The injections must be continued, at any rate, until all the organisms have disappeared, and longer if the fluid is markedly purulent. The study of smears of the fluid gives more reliable information as to the disappearance of the organisms than does the growth on culture media because, as already pointed out, the organisms quickly lose their power of growth outside of the body. In general, the temperature falls coincidently with the disappearance of the organisms, sometimes by crisis, sometimes by lysis. In certain instances, however, it remains elevated, although the organisms have disappeared and the other symptoms have improved. Elevation of the temperature alone is not an indication for the continuance of the injections. The following charts show the behavior of the temperature when the antiserum is given.

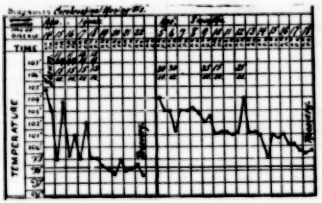



FIG. 3.

It is not uncommon to have rigidity, especially of the neck, persist after the disappearance of all other symptoms. Persistence of rigidity is not of itself an indication for the continuance of the serum treatment.

If the temperature continues elevated and other symptoms of meningeal irritation persist after the disappearance of the organisms and the partial clearing up of the fluid, it is wise to do another lumbar puncture after a few days and, if the organisms are again present or the fluid is purulent, to resume the serum treatment.

As much fluid as possible should be allowed to run out at each tapping in order to prevent dilution of the serum. The amount of serum introduced should at least equal the amount of fluid which has escaped. In any event, at least 15 ccm. should be given, and in older infants 30 ccm., unless symptoms of cerebral pressure develop. If they do, it is easy to let a little of the serum escape and no harm is done. Large doses are necessary in order to get a proper concentration of the serum. If little or no fluid escapes, an attempt to give the serum should be made just the same. If great resistance is encountered, it means that the connection between the subarachnoid space and the ventricles is closed. In such instances the serum must be injected through the anterior fontanelle. The serum should always be raised to body temperature before it is injected.

Many patients are promptly cured by the serum, if it is used early. Almost all are relieved, even if a fatal termination is not averted. In rare instances, however, the serum apparently has no effect. I have seen two such cases. They are at present inexplicable. The results are less satisfactory when the serum is given late. This is especially true in the chronic cases. Even in them, however, the results are sometimes surprisingly good.

*Pneumococcus meningitis.*— Pneumococcus meningitis is more common than was formerly supposed. It usually develops in the course of lobar pneumonia, but the symptoms of meningitis sometimes precede the signs of pneumonia by several days. It is, in all probability, one of the manifestations of a general pneumococcus infection and not a primary condition. It is especially common in the early months of infancy. The symptomatology is so similar to that of the other forms of meningitis at this age, especially the cerebrospinal and influenzal, that a diagnosis is impossible without lumbar puncture, unless the symptoms develop in the course of a pneumonia. The blood, as in all pneumococcus infections, shows a marked leucocytosis. The cerebrospinal fluid is markedly turbid or purulent, the cells are almost entirely polynuclear and the organisms are numerous. The course is almost always less than a week and the end almost invariably death. The following case is a good example of this type.

A girl, five months old, that had always been well, was taken suddenly sick April 6, with convulsions, high fever, cough and labored breathing. She did not vomit. The cough, fever and labored breathing continued. She was admitted to the Infants' Hospital April 9.

*Physical examination.* — She was well developed and nourished. There was moderate pallor. The respiration was grunting and the alæ nasi moved. The anterior fontanelle was 3 cm. in diameter and level. There was no rigidity of the neck. The pupils were equal and reacted to light. Nothing abnormal was detected in the chest. The abdomen showed nothing abnormal. The liver and spleen were normal. There was no paralysis, but slight twitching and rigidity of the extremities. The knee-jerks were equal and exaggerated. Kernig's sign was absent.

The urine was pale, slightly acid in reaction and contained a slight trace of albumin.

Five cubic centimeters of very turbid fluid under low pressure were obtained by lumbar puncture. This fluid deposited a fibrin clot but remained cloudy. A smear showed 95% of polynuclear and 5% of mononuclear cells. Very many Gram-staining diplococci were found both within and without the cells. They were surrounded by a capsule, were pointed at the ends and showed a tendency to form chains. No cultures were made.

She began to have mild convulsions with constant twitching the morning of the 31st. The convulsions soon ceased, but the twitching continued. Rigidity of the extremities developed at the same time and continued until death. The fontanelle was always level or somewhat depressed. The neck was never rigid.

The pupils were dilated and reacted but little to light. The knee-jerks were always exaggerated. Kernig's sign was never found. Signs of solidification at the right apex developed April 15. She died April 17.

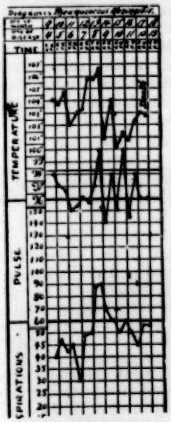



Fig. 4.

Symptoms of meningeal irritation are very common in the course of lobar penumonia in infancy and are in all probability due in most instances to the action of toxins and high temperature. In certain instances, however, there is bulging of the fontanelle, and lumbar puncture shows that there is an excess of cerebrospinal fluid under increased pressure. In these cases, however, the cerebrospinal fluid is clear, does not form a fibrin clot or contain an excess of cells or bacteria. The following case is an example.

A boy, eleven months old, was taken suddenly, on the sixth day of a lobar pneumonia, with tremor and delirium. The anterior fontanelle was bulging. There were clonic spasms of the extremities and retraction and rigidity of the neck. The pupils were equal and dilated, but reacted feebly to light. Lumbar puncture was done and 15 ccm. of clear fluid under much pressure were allowed to run off. This fluid did not contain a fibrin clot or an excess of cells, and cultures from it were negative. The fontanelle was bulging again within an hour after the puncture. The next day there was internal strabismus on both sides. The right pupil was much dilated; neither pupil reacted to light. The neck was rigid and there was moderate opisthotonos. There were constant clonic movements. The knee-jerks were much exaggerated. Kernig's sign could not be determined because of the rigidity. Another lumbar puncture was done and 60 ccm. of clear fluid, under very high pressure, were allowed to run off. This fluid did not deposit a fibrin clot or show an excess of cells, and cultures were negative. He went to sleep during the withdrawal of the fluid.

His condition remained essentially the same from this time until his death on the tenth day. The fluid obtained from lumbar puncture on the eighth day was also entirely normal. No autopsy was obtained.

This type fits in very well with what has been called serous meningitis and may be explained as being the result of excessive secretion from toxic irritation. Holt[3] has, however, recently described a case in which there were evidences of increased cerebral pressure and in which the fluid obtained by lumbar puncture was normal, which apparently recovered. The baby died seven weeks later of a second attack of pneumonia. The autopsy showed an old meningitis of the convexity from which a pure growth of pneumococcus was obtained. It is possible, therefore, that, on account of the tendency of pneumococcus meningitis to be localized at the convexity, more of the symptoms of meningeal irritation occurring in pneumonia may really be meningitis than we have in the past supposed.

*Influenza meningitis.* — The symptomatology of influenza meningitis in infancy is so similar to that of other forms of meningitis at this age that a diagnosis is impossible without lumbar puncture. In general, it resembles cerebrospinal more than tubercular meningitis. The blood does not show a leucocytosis. The cerebrospinal fluid, as in cerebrospinal meningitis, is very turbid or purulent and the cells are almost all polynuclear. It almost always contains a large number of influenza bacilli. The following case is an example of this form of meningitis.

A boy, nine months old, had always been well up to May 7, when he became feverish and coughed, and had much mucus in his throat. A physician who saw him at that time said that he had bronchopneumonia. He had several convulsions May 15, which were followed by marked rigidity and almost constant twitching. He became drowsy and refused to take his food. He did not vomit and was not constipated. He was admitted to the Infants' Hospital May 16.

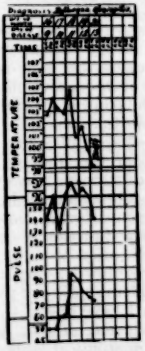



Fig. 5.

*Physical examination.* — He was well developed and nourished and of good color. The anterior fontanelle was 3 cm. in diameter and level. There was no rigidity of the neck. He was unconscious, but made frequent involuntary motions. The pupils were equal and reacted feebly to light. The heart, lungs, ears, throat and abdomen were normal. There was no paralysis,

[3] Am. Jour. Dis. Child., 1911, vol. i, p. 26.

but slight spasm of the extremities. The knee-jerks were not determined because of the continuous motion. Kernig's sign was absent.

The urine was clear, acid and contained no albumin.

Three cubic centimeters of very turbid fluid under low pressure were obtained by lumbar puncture. This fluid contained a large number of cells, 98% of which were polynuclear and 2% mononuclear, as well as very many bacteria which were later proved by Dr. Calvin Page to be influenza bacilli.

The twitching of the extremities continued, but he had no convulsions. There was never any rigidity of the neck, but there was moderate rigidity of the extremities. The knee-jerks were never determined because of the twitching. Kernig's sign was at times present on one side, but not on the other. The fontanelle remained depressed until the day before death. The pupils became widely dilated and did not react to light. He died, after progressive failure, May 20.

Influenza meningitis usually runs a short course and is almost invariably fatal. Treatment can be only symptomatic.

## COMPLETE RUPTURE OF THE SUPRASPINATUS TENDON. OPERATIVE TREATMENT WITH REPORT OF TWO SUCCESSFUL CASES.

BY E. A. CODMAN, M.D.,

*Assistant Visiting Surgeon, Massachusetts General Hospital.*

IN a paper on "Stiff and Painful Shoulders," published in the BOSTON MEDICAL AND SURGICAL JOURNAL for May 31, 1906, in speaking of rupture of the supraspinatus tendon in connection with subacromial bursitis, I presupposed, on anatomical grounds, the probable symptoms of such rupture as follows:

"One theoretical symptom (since the supraspinatus is put out of action) should be the persistence of passive and loss of active abduction. I am not ready to say this as yet, however, because in most cases the pain is so great that spasm prevents even passive motion, and later adhesion takes the place of spasm. When rupture of the tendon does take place, it probably is only partial and a Y-shaped attachment still remains to perform part of the function. (Fig.) In a similar way, the quadriceps may extend the femur when the patella is broken if the lateral expansions of its tendon are not torn. Nevertheless, I believe that the active function of the supraspinatus is important in elevation of the arm."

Since this paragraph was written I have had two cases of complete rupture of the supraspinatus tendon on which I have operated, and in both of which I was able not only to demonstrate the existence of the anatomical lesion in conjunction with the above symptoms, but succeeded by suturing the tendon to the tuberosity in bringing about complete restoration of the function of abduction. I have also, in a number of cases, verified the clinical diagnosis of a partial rupture such as depicted in the accompanying figure, which was produced in the other articles which I have written on this subject. (The reader is referred to the articles appearing in the BOSTON MEDICAL AND SURGICAL JOURNAL for Oct. 22 and 29, Nov. 5, 12, 19 and 26, and Dec. 3, 1908.)

This partial rupture is the common lesion, and, as I have explained, the remaining portion of the tendon is competent to take up the function when the sensitiveness due to the reparative process about the point of rupture has disappeared. The curious deposits of lime salts sometimes shown in the x-ray, and spoken of by Painter and Baer, are, I believe, faulty attempts at repair of these tiny ruptures of the tendon.

The following two cases are quite definite because they present complete rupture of the tendon of the supraspinatus. Therefore, the function of active abduction was almost entirely lost.

CASE 1. — Mrs. J. A. Aged fifty-two. Born in Scotland. Referred by Dr. Kent, of Dorchester, March 7, 1909.

Patient had always been a healthy, hard-working woman and had practically never been sick. On Oct. 3 of the previous year, i. e., five months before I saw her, while she was hanging recently washed clothes on the line in her yard, she endeavored to toss over a heavy blanket and felt something snap in her shoulder as she threw her arm up. She felt an intense pain and her arm fell and "hung by her side for a while." She was examined later by Dr. Kent, who found no thickening or ecchymosis. An x-ray was negative. Since then she had not been able to abduct the arm and had suffered much pain at night and somewhat during the day. The symptoms were in general those which I have described as the symptoms of adherent subacromial bursitis. The following points were, however, noticeably different.

(1) There was little atrophy of the deltoid, and it even appeared hypertrophied on account of the apparent swelling of the joint beneath. (2) Under the fibers of the deltoid, beneath the acromion and over the joint, there was a distinct deep fluctuation as if the whole bursa were full of fluid. (3) The ability to start abduction was absent, but when the arm was passively abducted to about 140°, the patient, by a strong contraction of the deltoid, could prevent the arm from falling for an instant, but the slightest downward pressure made it drop to the side. External rotation was about one half the normal.

*Operation.* — March 11, 1909. Usual incision between fibers of deltoid. Roof of bursa abnormally thick with granulation-like bodies on its under surface. Escape of straw-colored fluid, about one-half ounce. The floor of the bursa was found communicating with the joint, because practically the whole supraspinatus was torn from its insertion and retracted inwards. The biceps tendon was exposed over the articular surface, but was apparently uninjured. For about one-half inch on the lower visible portion it was bright pink; the rest of it was normal in appearance. By holding the bursa wide open, pulling down on the arm and raising the elbow from the table, the retracted end of the supraspinatus could be seen. This was caught with a tenaculum and pulled down enough to suture with four heavy silk threads to the remaining portion still attached to the tuberosity. This could not be done exactly, but was done nearly enough so that it seemed possible for repair to take place along the silk sutures. A little gap was also left on each side, which was not covered with tendon substances. It was in a sense a *suture à-distance*. When the operation was completed it seemed as if there was a fair possi-

bility of the supraspinatus obtaining enough attachment to enable it to perform its function, although the base of the bursa would necessarily remain a rough instead of a smooth surface. Dr. Kent gave ether, Dr. Vincent assisting. Dr. J. J. Putnam and Dr. M. P. Smithwick present.

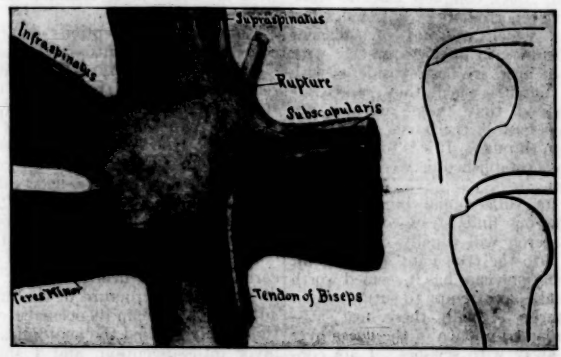
June 9, 1909. Looks very strong and well. Sleeps well. Arm aches at times but not much. Pain in stormy weather (after use). Gets good use out of arm and does her own work. Can button back of dress and do her own hair. *Real* free abduction to 135°. Fair rotation. Muscles developing well and deltoid is strong. Very much pleased with result.

This patient was demonstrated to the Interurban Orthopedic Club, March 25, 1911. The arm is perfectly well and the function is perfect. The only abnormal sign is that the deltoid is unusually prominent due to the presence of joint fluid in the bursa.

Club invited to examine the case and witness the operation.

*Operation.* — Jan. 10, 1911, at the Massachusetts General Hospital.

As in the previous case, when the fibers of the deltoid and the thickened roof of the bursa were incised, there was an escape of straw-colored fluid and the bursa was found to be in communication with the true joint. The supraspinatus had retracted so far that at first it could not be seen, and one looked directly at the articular surface of the bone with the uninjured biceps tendon lying across it. With some difficulty the supraspinatus tendon was caught with a tenaculum, freed and pulled forward. It was then sutured "*à-distance*" to the tuberosity with heavy silk prepared with paraffine after the manner of Lange. As in the previous case, the retracted tendon could not be entirely united, but enough strands of silk were put in to make




Case 2. — Mr. D. R. Aged forty. Hostler. Referred by Dr. John Homans, Dec. 21, 1910.

Patient is a strong, wiry Irishman. He has always been well. About three and one-half months previously, he had been saddling a horse in the stable and while tightening the girth he felt something in his shoulder give way and he fell to the floor. There was immediate loss of power in the arm, but he managed to finish saddling the horse without raising that arm. That night he consulted Dr. Luce, of Canton, who found no ecchymosis, but thought there was slight crepitus. An x-ray a little later was negative. The hip was also hurt by his fall, so that for some time he was more bothered by that than he was by his shoulder and he was obliged to use crutches for several weeks. At the time he presented himself to me for examination the symptoms were at first sight those of the adherent type of subacromial busitis, but on more careful examination the same signs that were present in the previous case were demonstrable, that is, (1) Relatively slight atrophy of the deltoid and an appearance of hypertrophy. (2) Fluctuation over the region of the bursa beneath the deltoid producing a "*verwölbung*" of the latter. (3) The persistence of nearly normal passive abduction with no active abduction. When the arm was passively abducted, the patient by a strenuous exertion of the deltoid could hold the head of the bone on the glenoid and thus prevent the arm from falling immediately. (4) In this case a distinct depression could be felt just above the tuberosity at the point where the tendon was torn away from the latter. A definite diagnosis was made and the members of the Boston Orthopedic

it possible for the function of the tendon to be replaced.

Convalescence was normal and the patient was not allowed to use the arm in abduction for three weeks, but since then has been using it with more or less freedom. He was shown to the Interurban Orthopedic Club on March 25, and the following condition noted at that time:

Patient is working every day — can chop wood and do other "chores" without pain. He can easily place his hand on top of his head or behind his back. Full abduction of the humerus on the scapula is, however, weak, and although he can elevate his arm, he cannot hold it in an abducted position against a downward pull of even moderate force. The strength of the arm in other respects is excellent and the patient is well satisfied. The function of the supraspinatus is fully as good as it was in Case 1, at the same length of time after the operation.

I have seen only one other case in which I have made a diagnosis of complete rupture of the supraspinatus, and as I have not been able to persuade this patient to allow me to operate, his present condition is very instructive as compared to the two cases mentioned above.

In spite of the fact that the patient is a powerful man with an extremely well-developed deltoid, he is now, four years after the injury, still unable to start abduction. As in the other cases, however, when the arm is passively abducted so that the patient's deltoid acts in the same line of force as the axis of the humerus and the remaining short rotators (i. e., subscapularis, teres

minor, infraspinatus), the head of the humerus obtains a fairly firm contact with the glenoid so that the weight of the arm can be held by a great effort of will on the part of the patient. The slightest pull downward on the arm, however, will overcome what little power he has, and as soon as the fulcrum on the glenoid is lost, the arm drops to the side.

It will be necessary for those readers who are interested in this subject to refer to the articles mentioned above to thoroughly understand this one, but, best of all, they should look for themselves at dissecting-room subjects, because injuries to this tendon are so common that I have never had any difficulty in finding examples of it in a single set (20) of dissecting-room subjects.

The injury, as I have explained, is usually confined to a partial rupture of not more than ¼ to ½ inch in breadth. Such complete cases as these three which I have reported are exceptional. The smaller ruptures, which are not of sufficient mechanical importance to interfere greatly with the function of the arm, are best considered with the subacromial bursitis which they cause. It must be understood that these ruptures are beneath the serous base of the bursa, which may or may not be torn through. If it is torn through, a communication is established between the bursa and the true joint.

In operating for subacromial bursitis, if on entering the bursa one finds straw-colored joint-fluid, a careful search will usually demonstrate a small opening into the true joint at the point of rupture. In only one case has it seemed worth while to me to make an attempt to suture one of these small ruptures. Usually these heal satisfactorily if the inflamed portion of the bursa over them is clipped away with scissors. I am convinced, nevertheless, that suture is necessary in long-standing complete cases such as those cited above. The one which was not sutured has a decidedly impaired function and for two years was unable to work.

I have never seen the tendons of the other short rotators ruptured except in conjunction with that of the supraspinatus. Twice I have seen a longitudinal split between the tendon of subcapularis and that of the supraspinatus.

## INTUSSUSCEPTION IN CHILDREN.*

BY JAMES HERBERT YOUNG, M.D., NEWTON, MASS.

OF all the causes of intestinal obstruction at all ages, intussusception comprises one third, while in infants it comprises three fourths. Nevertheless, it is not a common disease. At the Children's Hospital in the five years from 1903 to 1908, there were but eight cases, and the same number at the Infants' Hospital in the ten years previous to 1908.[1] Out of about 1,200 permanent cases at the Boston Floating Hospital for the last three years, there has been but one case of intussusception.[2]

Holt,[3] in an analysis of 358 cases of intussusception in children under ten years of age, found that 75% occurred in the first two years of life and 50% between the fourth and ninth months. Hess[4] found practically the same percentage in 314 cases, namely, 60% between the third and twelfth months. The disease is three times as frequent in males as in females.

Invaginations of one part of the intestine into another may occur at any part of the intestinal tract from the duodenum to the rectum, but, as naturally would be expected, the junction of the large and small gut is the most common site. These invaginations are usually single, when section shows three intestinal layers, but may occasionally be double, when the intussusception consists of five layers, and very rarely triple, in which case there are seven layers. Clubbe's[5] experience has shown that double intussusceptions are much more common than has generally been supposed.

Enteric intussusceptions comprise 0.6% and colic 1.9% of all intussusceptions according to Clubbe's statistics in 157 operated cases. The remainder occur at the junction of the large and small intestine. It has been generally believed that the vast majority — 75 out of 90 cases according to Holt — were of the ileocecal type, but Clubbe found that only 29.4% of his cases were true ileocecal, the ceco-ileocecal variety being more common, 32%, while 27% were double intussusceptions involving the cecum. The ileocolic type occurred in 9.7% of the cases.

Considering the frequency of this disease in early life, it is natural to suspect that differences of anatomical structure in the infant and in the adult would explain its occurrence. Dunbar[6] has thoroughly studied the anatomical changes which favor intussusception, and I shall quote freely from his paper. In the first place, the mesentery is proportionately longer in infants, the intestinal walls are thinner and there is greater mobility of the cecum and ascending colon. Then there is the rapid growth of the intestine, which, according to physiologists, is always associated with more or less perversion of function. At birth, the large and small intestines are very nearly the same size. The small intestine, about six feet in length at birth, is ten feet in length at the end of the second month, with practically no change in caliber; while the large intestine does not increase at all in length during the first four months of life, but increases rapidly in diameter. The region of the cecum, the most frequent location of intussusception, shows the most marked anatomical change. During the first few months, owing to the small pelvis and to the relatively larger colon, there is no small intestine in the pelvis. About the fourth month, which is the time when intussusception usually begins to occur, the small intestine descends into the pelvis. The ileum, which before formed a right angle with the cecum, now forms an acute angle, bringing the long axes of the cecum and ileum more nearly parallel and thus facilitating invagination at this point. Then, too, it is normal in infants for the small intestine to project very slightly into the cecum, and so it may be said that in

* Read at the Surgical Fortnightly Club, March 7, 1911.

infants there is normally an incipient intussusception.

Given these anatomical changes, what are the disturbances of function which may produce intussusception? The perversion of function due to the rapid growth of the intestines has already been mentioned. The immediate predisposing cause is probably due to exaggerated peristalsis, which causes irregular action in the muscular wall of the intestine, and may be brought on by diarrhea, trauma or mechanical causes. Nothnagel,[7] in 1884, proved by animal experimentation that irregular action in the muscular walls of the intestine could produce intussusception. He found that vigorous stimulation of one part of the bowel produced an annular contraction, which contracted ring was drawn into the bowel above, and invagination started, always in the direction of the peristaltic wave. He saw, moreover, that this swallowing of the contracted ring was not due to the fact that it was pushed forward from behind, but to the fact that the relaxed segment above was drawn over the contracted one by action of the longitudinal fibers of the relaxed segment. Then the contracted ring or intussusceptum was forced onward, as any foreign body, by contraction of both circular and longitudinal fibers. The growth of the intussusception, however, was at the expense of the relaxed, receiving portion, the contracted portion always remaining the head of the intussusceptum. For example, if a portion of the jejunum is invaginated into the ileum, increase in length is at the expense of the ileum. In an ileocecal invagination, the ileocecal valve is first invaginated. The invagination may proceed so far that the head of the intussusceptum may project from the anus, but that head will be, as at the beginning, the ileocecal valve. The increase in length being at the expense of the ascending and transverse colon, examination would show no trace of the ascending or transverse colon, but would give the appearance of the small intestine entering the descending colon. No matter what segment of the bowel forms the original apex of the intussusceptum, that apex will remain the same even if the length be doubled or trebled.

Like all rules, this one has an exception, the ileocolic variety. In this type the ileum is forced through the ileocecal valve, and as the valve remains fixed, as long as the intussusception continues to grow, the apex of the intussusceptum is constantly changing. Another physiological cause not to be overlooked is the fact that the peristaltic waves of the ileum stop at the ileocecal valve, and new peristaltic waves in the colon start, thus favoring intussusception by having one part contracted while the other is relaxed. To make the etiological factors complete it is only necessary to mention such causes as tumors of the mesentery or intestine, foreign bodies in the intestine and invaginations of Meckel's diverticulum and of the appendix.

The pathology of the condition, after it has once formed, is similar to that of a strangulated hernia. The obstruction to the blood supply with its consequent congestion and edema, followed by inflammatory exudate, adhesions and possible gangrene, is familiar to all and needs no further mention here.

Given, then, an individual whose anatomical structure favors intussusception, with a rapidly growing intestine and its consequent perversion of function, what are the signs and symptoms by which the condition may be diagnosed when it occurs? Sudden, severe, intermittent abdominal pain is the first symptom. The infant almost invariably has been previously healthy and is often breast-fed, and if there has been some slight gastro-intestinal disturbance, the onset of a more serious condition is perfectly obvious. The attack may come while the child is nursing, or he may awake, screaming, from a peaceful sleep. The intervals between the attacks of pain may vary from a few minutes to an hour. Vomiting soon occurs and may be almost projectile in character. The vomitus consists of food and then bile-stained mucus, but it is rarely stercoraceous. If the mother is not alarmed by the colic and vomiting, the appearance of blood in the stools usually leads her to seek medical aid. With the onset of pain the child may have a normal movement, but usually four or five hours later, depending somewhat on the location of the intussusception and the state of congestion, blood and mucus or blood alone appear in the stool, with the entire absence of fecal material. The child at this time does not appear especially sick, has a normal temperature, and, if not seen in an attack, seems well and happy. This is the time, however, when the diagnosis should be made, and careful attention to the mother's history should make it possible. Examination may or may not show a tumor, but if no tumor is felt, and if the diagnosis cannot otherwise be made, examination under ether at this time is not only justifiable, but demanded. A tumor is felt in about 86% of the cases. It is usually of the characteristic sausage shape, but not necessarily so. A rectal examination should always be made, and often the apex of the intussusceptum can be felt.

The differential diagnosis practically narrows down to those diseases which show blood in the stools. Excluding local causes of bleeding and the hemorrhagic diseases, there is only infectious and fermental diarrhea left to consider. Both have temperature, which is absent in intussusception in the early stages; neither has colicky pain, and the stools always shown fecal matter mixed with the blood and mucus. Appendicitis may show the presence of a tumor, but it is usually less distinct and not movable, as is the tumor in intussusception, and there is fever, leucocytosis and the absence of blood in the stools. Of the other causes of intestinal obstruction, nothing need be said; treatment is the same.

Although in speaking of the treatment of intussusception, I am entering the province of the next paper, I want to say a word in regard to this phase of the subject from a medical point of view. In speaking of the treatment, I shall

not refer to what *can* be done, but to what *should* be done. Ten or fifteen years ago a discussion of the treatment from a medical and a surgical standpoint would have been spirited, the medical man defending enemata and inflation of the colon, the surgeon laparotomy. To-day, however, such a discussion would be impossible as the best medical authorities are convinced that the treatment of intussusception is immediate laparotomy. That there are men still unconvinced is true, but it cannot be long before the brilliant results of surgery will have converted every one, and surgical interference will be the first thought in intussusception as it now is in appendicitis. The surgeons must not criticise too harshly, but must realize that medical men have only to pass through those stages which they themselves have passed. The surgeon has not always been ready to operate early.

As examples of the modern medical point of view I will quote briefly from three recent books. Kerley,[8] in his last edition of "Treatment of the Diseases of Children," says, "Intussusception is such a distinctly surgical affection that, like appendicitis, it requires but little notice here." "It is my custom in such cases first, to send for the surgeon and then make one attempt at reduction by water pressure." Koplik [9] says: "The diagnosis of intussusception once made, the case is one for surgical interference. The sooner surgical treatment is begun, the better the chances of recovery." Morse [10] is even more emphatic. He says: "The only rational treatment for intussusception at any stage is immediate operation as soon as the diagnosis is made. Attempts at reduction by inflation of the bowel with water or air are in rare instances successful. In the vast majority of cases, however, they are unsuccessful, they waste time and use up the child's vitality. It is impossible, moreover, to know at once whether the intussusception has been reduced or not by these measures, so that on this account more time is wasted."

Although the treatment is surgical, the physician must shoulder the responsibility of the high mortality. Clubbe's mortality has fallen from 50% in the first 50 cases operated upon to 7% in the last 57 cases, due, he says, to the fact that physicians in his vicinity have been educated to recognize the condition enabling him to operate early. Thus it becomes the duty of the physician to make the diagnosis of intussusception at the very onset, and when the diagnosis is once made, to put the case immediately in the hands of a surgeon.

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## TREATMENT OF INTUSSUSCEPTION IN CHILDREN.*

BY W. E. LADD, M.D., BOSTON, MASS.

STATISTICS are very apt to be misleading, and I believe that on intussusception they are more misleading than on many other diseases. However, I have compiled a few from the literature of the past ten years which may be taken for what they are worth, and are at least suggestive. The mortality of intussusception untreated is estimated at between 90% and 100%. That is, occasionally there is a case of spontaneous reduction, and rarely — but very rarely — a patient in whom the invaginated portion of gut sloughs off leaving the lumen patent. These cases are exceedingly rare and the probability is that if patients with intussusception were left untreated, the mortality would be nearer 100% than 90%. Now let us consider how much improvement over the above we may expect from irrigation, inflation and enemata of various forms. I collected from the literature 216 cases in which these various forms of treatment were tried. Out of this number, 40 recovered without further treatment; of the remaining number, every patient who was not operated upon died. This would suggest a mortality of about 81% for the non-surgical treatment of intussusception. Even this may be high, as it is possible that some of the patients with whom irrigation failed, and who were operated upon later, might have recovered through sloughing of the bowel or late spontaneous reduction. But it does not seem logical to expect much better than 70% or 75% mortality from the treatment by irrigation alone.

From the literature I also collected the operative results obtained by various surgeons in a series of 177 cases. Of these 54 were fatal, showing a mortality of 31 and a fraction per cent, and in several instances resection had to be performed. Omitting these cases, the mortality percentage would drop considerably. Resection, especially in infants with intussusception, is an exceedingly fatal procedure and should not, and would not, have to be resorted to nearly so frequently if the treatment recommended in various medical textbooks was not so carefully adhered to. The other factor in the still high mortality is *late operation*, which we likewise find recommended in some textbooks. Thus, in Rotch's [1] "Pediatrics" the following treatment is recommended: Food and cathartics are contra-indicated; hydrostatic pressure should be tried in the early hours of the attack, at first without ether, then with ether, then call a surgeon. He cites a case in which an infant six months old showed evidence of abdominal pains and passed blood by rectum one morning. That evening the physical examination was negative. The infant passed a restless night, occasionally vomiting, and next day a tumor appeared under the left costal border. Hydrostatic pressure was used unsuccessfully. A surgeon saw the patient and recommended waiting twenty-four hours, at the end of which

*Read at the Surgical Fortnightly Club, March 7, 1911.

time the patient was dead. The post-mortem examination showed the cause of death to be intussusception with a partial volvulus.

Osler [2] states that the treatment of intussusception should be by inflation or enemata, and that if this is not successful by the third day, surgical aid should be resorted to. No longer ago than February, 1910, at a meeting of the New England Pediatric Society, one of the men discussing a paper on intussusception recommended the use of injection and waiting until the tumor could be demonstrated and until it was proved that pressure would not reduce it. At a meeting of the British Medical Association in 1901, Dr. Turner stated that he had used irrigation in nine cases, in eight of which it had proved successful. So far as I can ascertain, this gentleman's experience is unique. At this meeting, Messrs. D'Arcy, Power, Eccles, Tubby, Abbot, Bush and Eve all favored laparotomy as soon as the diagnosis and necessary preparations could be made. Any teaching advocating prolonged use of irrigation or delay before operation is at variance with the opinions of most surgeons of to-day and in the writer's judgment is responsible in part for the still somewhat high mortality of laparotomy for the reduction of intussusception.

Irrigation, however, is still employed by many, not as an alternative for operation, but as an aid to it. Clubbe [9] uses injections of warm oil as a routine measure, to be followed promptly by operation if it is not successful. In his series of 138 cases, it has been successful fourteen times. This is not a large percentage of successes, about 10%, but still large enough to make it seem worth while trying. In his latest article, however, Clubbe [11] states that he has largely given up the use of irrigation. He reports his last 26 cases without a death and believes his good results to be due to having educated the general medical practitioner to make early diagnoses and to appreciate the value of immediate operation. Brewer [3] says the treatment of intussusception should invariably be surgical, but recommends, as does Clubbe, that distention of the colon with gas or water should be tried while the patient is being prepared for operation. Prolonged attempts at reduction by distention he says should be discouraged because they are weakening to the patient and render him less able to stand operation. Mr. Pitts reserves the use of irrigation for cases seen within a few hours of the onset of symptoms and as a preliminary to operation in other cases.

Wallis,[6] on the other hand, is opposed to the use of distention at any time. He considers that it results in the loss of valuable time, the loss of vitality, the possible rupture of the bowel and starvation of the patient, which is a very potent factor in infants; he also considers that it is rarely successful. He reports four successful operations and emphasizes rapidity of operation as an important element of success. His four operations occupied nine, ten, twelve and fifteen minutes respectively. Jacobson [4] holds the same view as Wallis with regard to irrigation, namely, that it should never be employed. He states that its dangers and the increased distention of the abdomen are a greater detriment than the partial reduction, sometimes accomplished, is a benefit. He advocates always operating as soon as proper preparations can be made and believes, as does Wallis, that speed of operation is a large factor in obtaining good results. Rigby [7] expresses similar opinions with the last two surgeons and reports five successful cases, in no one of which did the operation last more than fifteen minutes. My own experience has tallied with that of these surgeons. Two patients on whom I operated, one an infant two months old, the other four months old, both presented intussusceptions of the ileocecal variety, and in both instances the ileum was carried around from the cecum to the sigmoid. The baby two months old showed also a volvulus of the ileum. The operations took ten and twelve minutes, respectively, and both patients recovered. Erdman [10] takes a position between the views of the anti- and pro-irrigation men and reports a case in which enema was given and the tumor and symptoms disappeared. He, however, realizing the possibility of partial reduction having taken place, did an exploratory laparotomy and found three inches of the ileum still invaginated into the cecum; yet he recommends enemata as an aid to operation and to be tried in the first six hours with the hope of reduction if the surgeon will be prepared to operate at once on return of symptoms and will be ready to operate until the patient has had normal bowel movements.

As to the technic of distention, most writers are agreed that it should be given with the patient anesthetized and prepared for operation in case of failure. The patient should be on the table with the buttocks slightly elevated and the fluid introduced into the rectum through a nozzle or catheter by means of a hand or fountain syringe with about four feet of pressure. The buttocks should be held together firmly to aid in retaining the fluid. As to the kind of fluid used, Clubbe always uses warm oil; other men use warm salt solution. I cannot see that it makes a great deal of difference what fluid is used, but inflation with air has obvious disadvantages. While the injection is being given, manipulation of the mass through the abdominal wall may be of assistance sometimes. In case there is any tumor left after the injection, or in case of doubt, it is far safer to resort to operation at once than to wait.

As to the technic of operation, it is of great importance to keep children, and especially very young children, warm. The practice of bandaging the legs and arms and chest with wadding is a great aid in this respect and should never be omitted. The question of where to make the incision is of some importance. Brewer recommends making it over the tumor when localizing signs are present. Clubbe and Jacobson advocate the right rectus incision in many cases. Most of the other surgeons use a median incision, and this certainly has many advantages. It is quicker, there is less bleeding, and any part of the abdomen,

especially of a child, is easily accessible from it. Some surgeons only make a small incision first and endeavor to reduce the intussusception within the abdomen. Wallis and Clubbe are strongly opposed to wasting time in the endeavor to do this. I can imagine that some men might be very proficient in accomplishing this, but I feel sure that those whom I have seen try it wasted a great deal of time, and that in the hands of the majority of surgeons it is far wiser to deliver the mass through the wound as quickly as possible and commence reduction. The first part of the reduction is usually easy and may sometimes be accomplished by holding the gut firmly with one hand just below the advancing point and then sliding the thumb and forefinger of the other hand along the sheath, pushing the intussusceptum in front, much as one would empty a flexible rubber tube of air. The last few inches of the reduction are often difficult, and it is here that the operator must remember that it is unsafe to put much traction on the gut. The cause of the difficulty is usually edema of the gut and mesentery, which is a good point to remember, because steady pressure will frequently diminish the edema enough to allow a reduction which at first seemed impossible. It is always well to be persevering in attempts at reduction, as the mortality of resection is exceedingly high. When, however, resection becomes necessary on account of reduction being impossible, or on account of the existence of gangrene, there are three methods to choose from: End-to-end anastomosis with suture (or Murphy button); lateral anastomosis; and the method described by Mr. Jesset, which consists in uniting with a continuous suture the two portions of bowel at the point where the intussuscipiens receives the intussusceptum; then making a longitudinal incision in the free border of the intussuscipiens and delivering and excising the intussusceptum; suturing and replacing the stump. The longitudinal incision in the sheath is then closed. This accomplishes the same results as nature with her occasional spontaneous cure by sloughing. The rules for closing the abdomen are the same as in any surgical operation: close by layers if the condition of the patient warrants it, otherwise by through-and-through sutures.

The after-care of these cases consists in combatting shock and restoring vitality as quickly as possible. Wallis, Clubbe and Rigby recommend rectal saline infusions as soon as the child is put to bed, and strychnia or brandy given subcutaneously as a stimulant. They all agree that feeding should be begun as soon as possible and that in cases of nursing babies there are no ill-effects from giving the baby the breast early. Enemata are used in the first twenty-four hours to move the bowels and for two or three days afterward. Jacobson advocates the use of aseptic ergot subcutaneously, together with warm saline infusions to combat shock. In the first two or three days following an operation for intussusception there is likely to be considerable elevation of temperature, which Clubbe believes to be due to absorption from the bowel of toxins from retained blood clot, feces, etc. Whatever the cause of the temperature, it does not signify a peritonitis and, as a rule, comes to normal the third or fourth day.

From the review of this literature one seems warranted in drawing the following conclusions:

1. That intussusception is a very fatal disease.
2. That the mortality of irrigation and palliative treatment is high (about 70% at least).
3. That the mortality of surgical treatment is about 50% better than that of irrigation.
4. That the way to reduce the still high operative mortality is to operate early and not after exhausting the patient by attempted palliation and delay but as soon as the diagnosis is made.

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## Clinical Department.

### A CASE OF PROGRESSIVE MUSCULAR ATROPHY CHARCOT-MARIE-TOOTH TYPE.

BY FREDERIC J. FARNELL, M.D., PROVIDENCE, R. I.

THIS form of muscular atrophy was recognized as a distinct type by Charcot and Marie [1] in February, 1886, and, quite independently, at almost the same time, by Tooth,[2] who wrote a thesis at Cambridge, England, under the title of "Peroneal Type of Progressive Muscular Atrophy," because, although it might attack any given group of lower leg muscles, it usually seemed to commence in the peroneal group more often than any other.

In 1889 Hoffman,[3] in Germany, published an article entitled "Ueber progressive Neurotische Muskel-Atrophie," which established a hitherto opposed new type of atrophy.

Sachs,[4] in 1890, published a paper on the "Peroneal Form or Leg Type of Progressive Muscular Atrophy," in which he described clearly the clinical picture in two cases and referred to two other such cases.

In 1899 Sainton [5] published, in Paris, a thesis into which he had gathered all cases up to that time reported, and published an additional case with autopsy findings. He described the Charcot-Marie type as commonly hereditary and often familial, although occasionally it occurred in isolated cases. It is seen more frequently in men than in women. Usually it develops first in the lower extremities, sometimes in the upper and occasionally in all four at once. In the lower extremities the atrophy does not extend above the lower third of the thigh, and in the upper extremities above the proximal portion of the

forearm. The atrophy and paralysis advance parallel with each other. The hand frequently presents the "claw" type, while there are special deformities in the feet due to the development of the paralytic clubfoot and an aspastic weakening. Disturbances in sensibility are common but not constant. Fibrillary tremors are almost invariably noted. Knee-jerks are reduced or abolished, very exceptionally increased. Changes in the electrical response are both quantitative and qualitative and vary from slight reduction to complete absence and occasionally show a partial or complete reaction of degeneration.

The nerves in the affected portions show a progressive interstitial neuritis. The lesion was not confined to the periphery in two of his cases, but the columns of Burdach were degenerated without the involvement of Lissauer's zone. The pyramidal tracts as well as the anterior horn cells and Clarke's column were also involved in the degenerative process. In his own cases the changes in the peripheral nerves were very slight, while the cases of Marinesco,[6] Virchow,[7] Freidreich [8] and Oppenheim [9] showed extensive neuritic changes. It should be added that in unusual cases the facial, ocular, faucial and laryngeal muscles have been affected, and in several cases the atrophy has progressed to the involvement of the skeletal muscles. There is rarely an optic atrophy.

Since the appearance of Sainton's paper a great number of additional facts have been ascertained and the possibility suggested that this type of atrophy may constitute the link between the myopathies and the spinal atrophies.

However, some conclusion as to the hereditary character of the disease has been raised, and Ausbach [10] has questioned whether it is hereditary in any way whatever, whereas Warrington,[11] Sachs, Osler,[12] Brasch,[13] Fabrian [14] and Church [15] have reported cases in which the hereditary taint was pronounced and extended back several generations. In the case reported by Church a notable existence of heredity was evinced and it appears that the disease had passed through five successive generations at least. This latter case resembles in many respects the report which follows.

Case. — Aged forty-six; Ireland; widow; temperate.

*Family history.* — Negative for both hereditary and familial disease.

*Personal history.* — There was nothing of interest regarding her early life. She married at the age of twenty-six a blacksmith of intemperate habits, who died three years ago of pulmonary tuberculosis. She had seven children, five of which are alive and well; she had no miscarriages. Syphilis was denied by the patient.

She has had three distinct attacks of manic-depressive insanity, manic phase, within the last seven years, each of about three months' duration and ending in complete recovery.

In March, 1907, she received a small lacerated wound of the right thumb with splitting of the nail due to an injury on a lead washboard. She treated herself with household remedies and removed the bandage after three days. There was no secondary infection. The following July she was operated upon for retroflexion of the uterus and laceration of the perineum, making an uneventful recovery. After leaving the hospital she noticed that she could not use her hands as well as previously, especially the right hand, which was numb and stiff. Four months later a double wrist drop was quite evident, and at the same time she complained of contraction and stiffening of the fingers and, as she expressed it, "lumps came on my wrists." She also had some pain in her arms and she was unable to hold objects in her hands. She went to a neurological clinic in New York City, where a diagnosis of "lead poisoning with neuritis" was made. A few months later she noticed that her gait was stiff and that she was unable to stand on her heels.

*Physical examination* (May, 1909). — No cranial nerve involvement. Pupils equal and regular in outline, reacted to light and accommodation within normal limits. No nystagmus or diplopia. There was a marked weakness in her hand grips. Her forearm and hands showed poor amount of muscular and adipose tissue. The thenar and hyperthenar eminences were thinned, and a marked atrophy of the interossei muscles was evident. She could not abduct or flex either thumb, and was unable to abduct the forefingers. There was a contraction of the second phalan-



geal joint in all fingers, more marked in the small fingers. She could not spread out her fingers. The attitude of the hands was ulnar deviation of the wrist and a typical "main en griffe." Flexion was better than extension at the wrist. Fair preservation of strength in the flexors and extensors of the arm, and no involvement of the upper arm or shoulder girdle. There was no apparent atrophy of the lower extremities, but she claimed that her legs were much thinner than formerly and there was some suggestion of a spindle shape. There was well-marked loss of strength in both flexors and extensors, — she was unable to raise her toes from the floor and she was unable to stand on her toes. Reflexes of the upper extremities were all absent with the exception of the biceps, which was well preserved. The knee-jerks were greatly diminished; the Achilles jerks were absent. No ankle clonus and there was no Babinski, Oppenheim or Gordon. Abdominal and cilio-spinal reflexes were present. Muscle sense was intact and there was no hypotonia. There was slight swaying in the Romberg position and she was able to stand better with her feet apart. Her gait was unsteady, of the steppage type, raising her feet high in the air and coming down toes first. On turning quickly she was liable to lose her balance. No sensory anomalies. There were fibrillary twitchings of the muscles of the thenar and hyperthenar eminences and also a sudden

muscular contraction with a tendency to clonicity, followed by a muscular quivering. No speech defect. Her lungs showed a suspicious process in the right upper lobe, but there was no disease of her abdominal viscera. Her urine was negative.

The electrical irritability of the muscles of her forearms, hands, legs, feet was markedly lessened to both galvanic and faradic currents. With the faradic current there was only a very slight contraction with fifty cells in the muscles of the upper extremities, whereas in the lower extremities it required a still stronger current. With the galvanic current, the right upper extremity showed KCC greater than ACC with the largest current, and the left upper extremity showed KCC equal to ACC with the largest current.

During the last one and a half years there has been little change in her condition, although upon one or two occasions Dr. J. W. Moore, of Central Islip, has found diminished sensibility to heat and cold, with preservation of pain and touch in both legs and hands. She has been examined from time to time since that observation was made, but the writer has been unable to corroborate those findings and when last examined there were no disturbances in cutaneous sensibility. The electrical examinations still show the same reactions to both galvanic and faradic currents, — a quantitative as well as a qualitative loss.

A cytological examination of the spinal fluid by Dr. Moore showed a moderate increase in lymphocytes, about twenty to an oil immersion field, and the Noguchi modification of the Wassermann reaction was considered positive in the fluid. The blood serum was not examined for complement fixation.

To sum up briefly: It is evident that the patient's first symptom of a neurological disorder occurred in 1907 with stiffness and numbness in her hands followed four months later by the development of a typical "main en griffe." In less than a year her gait became that of the steppage type. During the ensuing three years atrophy of the proximal portion of the forearms and hands and the lower third of her legs, assuming the spindle shape, has been evidenced. Fibrillary tremors, reduction in reflexes and both quantitative and qualitative changes in the electrical response have been manifested.

The clinical features appear to classify this case with the neuritic forms of muscular atrophies, it being atypical only in the fact that it has occurred as an isolated case; also that the onset began in the fourth decade of life, showing itself first in the upper extremities, but soon followed by difficulty in walking. Aside from this the course of the disease appears to be quite typical.

I am indebted to the kindness of Prof. C. L. Dana for the opportunity of reporting this case; to Dr. R. Foster Kennedy for his valuable assistance in my study, and to Dr. Wm. Mabon and Dr. G. H. Kirby for the privilege of viewing their records.

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## HEMORRHAGIC DISEASE OF THE NEWBORN; REPORT OF TWO CASES IN ONE FAMILY.

BY ORION V. WELLS, M.D., WESTFORD, MASS.

INSOMUCH as in the analysis of a series of cases of hemorrhagic disease of the newborn, made by Doctors Green and Swift, in a recent issue of this JOURNAL (March 30, 1911), the condition was never found to occur in two babies of the same mother, I believe the two following cases should be of interest:

CASE I. Boy, born March 16, 1908, of a primiparous mother, after a labor of two hours.

Father and mother were in good health. Mother said she had always had a tendency to bleed profusely from any slight injury.

Baby was apparently normal and well at birth. When twelve hours old, without cause, it began to have epistaxis, hemorrhage into right scrotum, filling it, tense and shiny, to the size of a large walnut; hematoma of right groin 1 by 2 inches. It voided no urine, but passed meconium, normal in appearance. There was no bleeding from the umbilicus. Epistaxis continued twelve hours, when baby died.

CASE II. E. H., sister of Case I, born March 8, 1909, one year, lacking a few days, after Case I. The duration of labor was two hours and was normal.

Upon examination baby was perfectly normal, and functions were normal.

When thirty-seven hours old, while at mother's breast, its face was found to be covered with blood which flowed from a pinpoint abrasion on the bridge of the nose. Cause of abrasion unknown. The hemorrhage continued two hours, soon after which baby was seen by me.

*Examination.* — Looks well. Skin red; no icterus. Temperature, 99.6. There is a crust the size of a pinhead on the nose. Entire hard palate ecchymotic and three ecchymotic spots the size of a pea on the soft palate; profuse hemorrhage from umbilicus saturating the dressings, which, the nurse declares, were not stained four hours before; a hematoma the size of a cent on the angle of right scapula; no macroscopic blood in urine or stools.

*Treatment.* — Eight cubic centimeters fresh rabbit's serum were given as soon as possible. When baby was next seen, twelve hours after the first dose, there had been no further hemorrhage from the above places, but there had been a slight epistaxis from left nostril. Rabbit's serum, 8 ccm., was repeated and after this no more bleeding occurred. The serum was repeated again in twelve hours. The child is now over two years old and perfectly well.

The mother has borne one child since, which showed no tendency to hemorrhage.

THE State Board of Health announces that Senate Bill No. 140, to regulate the practice of optometry in the State of Illinois, was defeated in the Senate, May 3, by a vote of 14 to 10. Eighteen more senators were present but did not vote, To pass a bill, twenty-six votes are required. — *Jour. Am. Med. Asso.*

# Reports of Societies.

## MEDICAL SOCIETY OF THE STATE OF NEW YORK.

One Hundred and Fifth Annual Meeting, Held in Albany, April 16, 17 and 18, 1911.

*Monday, April 16.*

MEETING OF THE HOUSE OF DELEGATES.

The usual reports of officers and committees were presented. That of the Secretary showed that, during 1910, 477 new members were received, and that on Jan. 1, the membership was 6,681. He stated that the experience of five years since amalgamation (with the New York State Medical Association) had shown that each year the society is gaining, not only numerically, but in importance and influence. The Committee on Experimental Medicine in its report referred to its successful efforts, in co-operation with the Committee on Legislation, in preventing the passage by the Legislature in 1910 of two anti-vivisection bills, and spoke of the necessity in the future of unceasing vigilance in this contest with prejudice and unreason. In his report of malpractice defense for the year, the counsel of the society, Mr. J. T. Lewis, said: "It will be gratifying to the members to know that the malpractice defense initiated in this state is daily gaining in national importance. Sister societies of various states are becoming imbued with the determined fight made against blackmail here, and the medical profession is fast coming to realize how important it is that its members throughout the country should stand shoulder to shoulder in repelling an attack than which there is no litigation more vicious and far-reaching in its importance, not only in its effect upon the profession, but also by its indirect influence upon the public health." Having given a synopsis of the new cases begun during 1910, he said: "In the above list of cases it will be noted that a large percentage of them have women plaintiffs. The only explanation is that the attorneys bringing these actions are inspired with the hope of enlisting the sympathies of a jury. Formerly a great majority of the cases were based upon alleged improper treatment of fractures, but it is evident that, discouraged in that field, attorneys have hope in this new one."

*Tuesday, April 17.*

PRESIDENT'S ADDRESS.

The address of the President, Dr. Charles Stover, of Amsterdam, was devoted to the general subject of medical education. In the course of it he suggested that a satisfactory history of medicine would be of material service to the student.

STUDIES ON A LOCAL HEMATOLOGICAL FACTOR IN THE CAUSATION OF UTERINE HEMORRHAGE.

By Dr. A. Stumdorf, Manhattan. He spoke first of hemorrhage from systemic causes, circulatory and hemic, and of hemorrhage accompanying demonstrable uterine, adnexal and pelvic disorders; after which he proceeded to treat of hemorrhage occurring in the absence of demonstrable systemic or local derangements. The results of his studies were summarized as follows: (1) The general circulating blood during the menstrual period and in the hemorrhagic conditions here considered shows normal coagulative properties. (2) During menstruation and hemorrhage the endometrium receives normally coagulable blood, but gives vent to this blood in a non-coagulable state. (3) The non-coagulability in the menstrual and hemorrhagic blood displays an identity in experimental and clinical manifestations differing only in degree. (4) Under the given conditions the endometrium exercises a function capable of rendering coagulable blood non-coagulable. (5) This function is due to the presence of an inhibiting substance generated *in loco*, and not the result of a dialytic process, as suggested by Cristae and Denk. (6) The non-coagulable blood contains all the essentials for coagulation; nevertheless, this blood is capable of inhibiting coagulation in normal blood from the same individual. (7) All of which tends to warrant the assumption that an inhibitive element as regards coagulation, probably augmented in activity by contributory structural abnormalities, presents a local causative factor in the production of uterine hemorrhage.

OPERATION FOR ADHERENT RETRODISPLACED UTERI BY SHORTENING THE ROUND LIGAMENTS THROUGH THE INGUINAL CANAL, AFTER ABDOMINAL SECTION THROUGH THE TRANSVERSE INCISION.

By Dr. LeRoy Broun, Manhattan. He considered this method of restoring and retaining the uterus in its forward position ideal in that, first, the procedure is anatomical, no abnormal implantations of the uterine supports being made or false adhesions brought about; second, the strongest part of the round ligament is utilized.

DIAGNOSIS AND SURGICAL INDICATIONS OF DUODENAL ULCER.

By Dr. James T. Pilcher, Brooklyn. Having stated that in some instances it is practically impossible to differentiate this from uncomplicated ulcer of the gastric outlet, he said the purest type of symptom-complex is evidenced by duodenal ulcer. This was characterized by four cardinal symptoms: chronicity, periodical exacerbations, peculiar pain, and the relief of pain by the ingestion of food or alkalies. The correctness of these diagnostic signs was demonstrated by the analysis of 156 cases personally investigated. While the results of analysis of the gastric contents, which was made in every instance, were not diagnostic, these not infrequently furnished confirmatory evidence. The same might be said of the duodenal bucket, which was employed in 25 cases, and certain inferences could also be derived from the thread impregnation test and x-ray pictures. The existence of latent cases was not to be overlooked. There was no ground, he said, for conflict between physician and surgeon in this field. The conditions calling for operative interference were hemorrhage, stenosis, tumor and intractability. The cases operated upon had been treated medically for an average of twelve and one-half years without any permanent relief, and he pointed out that the small operative mortality in duodenal ulcer was more than offset by the enormous percentage of deaths in cases where perforation occurred.

THE TREATMENT OF BLADDER PAPILLOMATA WITH THE HIGH-FREQUENCY CURRENT OF OUDIN.

By Dr. Edwin Beer, Manhattan. It was well known, he said, that these growths are difficult to cure and that they simulate malignant growths almost regularly. Guyon taught that they were clinically malign, and Rokitansky called them carcinoma villosum. These papillomata had been attacked by suprapubic cystotomy with very unsatisfactory end results, since, as a rule, they recurred. Of late they had been attacked transperitoneally, with the removal of the growth together with the whole thickness of the bladder wall, but it was difficult to believe that by this method

recurrences were going to be less frequent than by the older transvesical procedure. The third method was introduced by Nitze, who used the operating cystoscope, snaring the growth and cauterizing the base. This gave the best results up to date. The fourth method, introduced by the speaker, made use of the transurethral route, and consisted in the destruction of the growth by direct application of the Oudin high-frequency current to the neoplasm. The technic was simple and the procedure painless, and up to the present the results had been most satisfactory, not only in his own hands, but in those of several other operators. In all, thirty-seven separate tumors had been treated and destroyed. Two of Dr. Beer's cases had remained well the greater part of a year and continued so, without any sign of recurrence, and similar experiences had been met with by the other surgeons. It would appear, therefore, that this simple method of treating bladder papillomata will be the method of the future.

### THE NEW OPERATING PAVILION FOR THORACIC SURGERY AT THE GERMAN HOSPITAL, NEW YORK.

By DR. WILLY MEYER, Manhattan. Upon his return from the meeting of the American Medical Association in 1908, where thoracic surgery had been a topic of discussion, Dr. Meyer induced the trustees of the hospital to open it to this new branch of surgery. A machine shop in the building was fitted up as an operating room, and one of his positive differential pressure cabinets installed. In 1909 and 1910 several thoracic operations were performed, and the experience gained showed that more room was needed and that it was advisable to establish a separate department for thoracic surgery. Funds were collected for the purpose, and the building and plant have now been completed and turned over to the hospital. The equipment consists of one universal chamber which is a combination of a negative chamber with a positive differential pressure cabient within the same, and is located in the aseptic operating room, and one positive differential pressure cabinet in the septic operating room. Having described the equipment of the power room, he went on to say that the whole installation of light and power has been cut up into small units, and each individual circuit is separately protected, so that the chamber can never be without light or power, and the complete interruption of an operation is excluded. The beds in the recovery rooms have been constructed on the lines of a stretcher; they have no head-frame and are of such a height that the patient can be wheeled to the apparatus on the bed, and can be placed under differential pressure without being taken from it. This has been done because the procedure may not have been finished with the surgical interference, but may extend over the first twenty-four or forty-eight hours of the after-treatment. As speedily as can be, the new department will be placed on the broadest possible basis and will be equipped with every known useful type of apparatus for thoracic surgery; so that it will be possible to individualize and to employ in every instance the apparatus appropriate to the case in hand, as well as to make observations, for the scientific elucidation of such cases, by co-operation with specialists in allied branches.

### THE BLADDER AND THE PROSTATE.

By DR. J. F. W. WHITBECK, Rochester. It was not his purpose, he said, to attempt to present a scientific or novel paper for the expert, but rather a practical view of the subject for the consideration of the general practitioner. It had been estimated that at least one third of all men have an enlargement of the prostate which involves the bladder in difficulties. The residual urine, after micturition, might be sufficient to so paralyze the bladder as to cause retention which might require the use of the catheter. With even a moderate residual urine there might result decomposition or the deposit of a sediment from which a calculus could be formed. In order to prevent increased prostatic congestion and vesical irritation it was important to regulate the diet so as to have the urine as bland as possible, and the time and frequency of urination, to preserve the capacity and contractility of the bladder. The patient should also be instructed to be deliberate in urinating in order to expel as much as possible of the residuary urine. Water was the best diuretic, and would do more to render the urine bland than any other agent. The risks of catheterism could not be over-estimated. When this was required the anterior urethra should be cleansed by syringing with a 1 to 10,000 bichloride solution, and the glans penis and the meatus should also be sponged with it. The catheter, having first been boiled (preferably in a solution of boric acid), should be lubricated with some aseptic material, and the hands of the operator should be surgically clean. A soft rubber No. 8 catheter was recommended, and a convenient lubricant might be composed of one part adrenalin solution, one part 4% solution of cocaine in 1 to 5,000 bichloride, and four parts some such aseptic lubricant as was furnished in tubes by the chemist. The metallic catheter should not be employed if a soft rubber catheter could be passed, and No. 8 appeared to be better than a larger size. The speaker would not recommend the use of the sound in prostatic disease, nor would he advise castration for the cure of this affection. Experience showed that in a patient in fair health the prostate might be removed without difficulty or danger. There were dangers in delay, and a limit to the time when this operation could be done safely, for cystitis, pyelitis, calculus and other serious conditions might follow the continued use of the catheter and the indefinite postponement of radical treatment.

## SYMPOSIUM ON SALVARSAN.

### THE SIGNIFICANCE OF SALVARSAN AND ITS PLACE IN THERAPEUTICS.

DR. S. J. MELTZER, Manhattan, said that therapeutics, which ought to be the most important part of medicine, had been neglected during the new era in scientific medicine, and a fatal conviction became rooted that the cause of disease cannot be reached by any therapy. Two therapeutic methods, however, had been developed during this new era, one to treat symptoms and the other to strengthen the patient by physiological measures. The study of immunity brought to light a method of treatment aiming at the cause of the disease, consisting in utilizing the means of the animal organism which it employs when it recovers from an infectious disease. These means were the antitoxins, of which at least two were of practical value: those of diphtheria and meningitis. The method, however, had its limitations. The two old drugs which were real specifics against the cause of disease, mercury and quinine, were accidental remedies, with the discovery of which neither science nor art had anything to do. Salvarsan was a specific for several diseases which are caused by a closely related group of parasites, the spirilla; it was a spirillocide. It was a synthetical chemical compound, made with great ingenuity to fit, in the first place, just the group of spirilla. It was based upon such simple principles as permitted the hope that on their basis other compounds might be found which would specifically fit other groups of parasites. The high position of Ehrlich as a scientist and his masterly achievement would raise the estimate of therapeutics

to a higher level and also attract competent workers. The fundamental results obtained in animal experiments had been amply confirmed in the clinical observations upon relapsing fever and syphilis, though the clinical results were obscured by incompetent and biased writing. Salvarsan had various advantages over mercury in their respective actions on syphilis, but the proper fields of action of the two would be settled by unbiased and judicial methods of observation. In human syphilis a single injection of salvarsan was in many instances insufficient to sterilize the body permanently. On the other hand, it was found that repeated injections do not lead to the creation of resistant strains of spirochetes. Single large doses, therefore, were not a requirement, and the speaker suggested the employment of a series of repeated administrations of small doses, injected into the lumbar muscles. By this method, which could be easily used by the general practitioner, certain unpleasant by-effects would be obviated.

### THE INDICATIONS FOR SALVARSAN.

By Dr. S. Pollitzer, Manhattan. The time had not yet come, he said, for a final estimate of the value of this remedy, but we had already acquired sufficient knowledge of it to say that a great addition had been made to our resources against one of the most serious ills of humanity. There was naturally a certain amount of disappointment since we had found that the hope of a *sterilisatio magna* with a single dose was vain. Nevertheless, a single dose of salvarsan had a very great value in the treatment of syphilis. The most important indication for the exhibition of the drug was in all cases with fresh or infective lesions, chancres, mucous patches, condylomata, etc., as these were rendered harmless within a few days at most by one injection. A dose of salvarsan should be given in cases of extensive ulcerative lesion; in cases in which important organs were threatened; in cases in which lesions in the throat or the bones gave great pain; in infants with hereditary syphilis; in an early stage of tabes; in syphilis complicated by pulmonary tuberculosis, in which mercury and iodides were often harmful; in syphilitic cachexia, in which the wonderful tonic effect of the drug was especially valuable; and, finally, in cases in which the Wassermann reaction remained positive despite prolonged and thorough treatment with mercury. The indications for the re-injection of salvarsan were not yet clear, and that subject involved the whole question of the ultimate value of the remedy in the treatment of syphilis, as distinguished from the treatment of its symptoms. The speaker was employing salvarsan alone, that is, without mercury, in a selected number of cases, and his results seemed promising. He would, however, urge the medical public not to depend on salvarsan in the present state of our knowledge, and to help disabuse the general public of the idea that a dose of "606" is a cure for the disease. Every case of syphilis should receive a dose of the drug if this were really indicated, but, in addition, should receive the most active mercurial treatment.

### TECHNIC AND METHODS OF ADMINISTRATION OF SALVARSAN.

By Dr. Homer F. Swift, Manhattan. Salvarsan, he said, was a dihydrochloride of dioxydiamidoarsenobenzol, which is soluble as an acid and an alkaline salt, but not as a neutral one. It was made both neutral and alkaline by adding sufficient quantity of sodium hydrate. The alkaline solution for intramuscular injection was used first and was the most painful. The neutral suspension, prepared after the formula of Michaelis or Wechselmann, was used quite extensively because it was found the least painful. Acid salt, viz., salvarsan dissolved directly in water, has been used by a few workers, who claim it is the least painful. Lately, the suspension of dihydrochloride in oil has been used most extensively and seems to have given quite satisfactory results. Its chief advantage is its ease in preparation and the fact that a large dose of the salvarsan may be given in a small volume. In the intravenous injection only an alkaline solution should be used. It should be absolutely clear and so diluted that each 50 ccm. of the solution represents 0.1 gm. of salvarsan. It has been found that water is a more satisfactory diluent than normal sodium chloride. The acid solution should not be used intravenously, because of the danger of acidosis, and also because the mixing of acid salt with blood serum produces a heavy precipitate. In making intravenous injections, the injection of the salvarsan should be preceded and followed by sodium chloride, so as to be sure that no salvarsan escapes into the perivascular tissues. In making intramuscular injections, the needle should always be inserted empty, and all salvarsan should be washed out of it after the injection has been made. The intravenous method is the most efficient, but with it the drug is eliminated the most rapidly. It is also the least painful for the patient. The chief advantage of the intramuscular injection is its prolonged effect; the pain and necrosis are the chief objections to its use. A combination of intravenous and intramuscular method has been used to obtain both the rapid and prolonged effect. The use of small frequent intravenous injections is suggested. In this way, all the drug is utilized without the disadvantages of intramuscular treatment. The most efficient method has not been absolutely determined, but we are justified in proceeding with various combinations, for in any event we can promise the patient considerable benefit from the use of salvarsan.

### AN ANALYSIS OF THE CLINICAL AND SEROLOGICAL RESULTS OBTAINED IN THE TREATMENT OF ONE HUNDRED AND SEVENTY-FIVE CASES OF SYPHILIS WITH SALVARSAN.

By Dr. J. A. Fordyce, Manhattan. His report was a very favorable one. In view of the possibility of recurrences and of the difficulty of influencing the Wassermann reaction with a single dose, he advised a repetition in from one to four weeks, in addition to an active mercurial course. He had found salvarsan of special service in cases of malignant syphilis, where the results from it were more rapid and brilliant than he had ever observed from any other treatment. Failures were met with in advanced tabetics and paretics, and in five cases of hereditary disease, though in three of the latter the dose given was inadequate. He had had no accidents, although he had given nearly a hundred intravenous injections, and he did not believe salvarsan more dangerous than many other therapeutically active drugs. It was, however, necessary to observe the contra-indications to its use, while the greatest care should be exercised in the preparation of the solution and the technic of its administration. In only one case had he noted by-effects which gave him any anxiety.

### A FEW PLAIN TRUTHS ABOUT SALVARSAN.

In this paper Dr. W. S. Gottheil took a much less sanguine view than the preceding speaker. While salvarsan, as an additional weapon in our armamentarium, was valuable in certain cases, he said, it did not accomplish the marvels attributed to it. It was powerful in combating symptoms, but it did not cure, any more than mercury did. Indeed, evidences of the

persistence of syphilis appeared more frequently after its use than after treatment with mercury. Cases recently infected were the only ones by which its efficacy was to be estimated. Its disadvantages and dangers, with the large series of deaths reported, warned us that this remedy was not one for the profession at large. Mercury was still the antisyphilitic for general use. In early syphilis salvarsan had proved efficacious; here the remedial effects were equal to those of mercury, though it sometimes failed. In late cases it was as useless as mercury. The latest advice from high places was to give salvarsan first and then to recur to mercury. Cases of idiosyncrasy against mercury were not as frequent, however, as some would have us believe since the discovery of salvarsan. It might be stated, in general, that the latter was valuable in certain rare cases in the early stages where immediate action was called for, but was not indicated in ordinary cases.

THE BY-EFFECTS OF SALVARSAN.

DR. JAMES WINFIELD, Brooklyn, described the by-effects as local, organic and general. Among the effects mentioned were pain, infiltration, sloughing, necrosis (especially after subcutaneous injection), enlargement of neighboring lymphatic glands, a scarlatiniform eruption, urticaria, icterus, herpes zoster, pulmonary embolism and pneumonia, cardiac and vascular disturbances, hemorrhagic nephritis and acute necrosis of the renal convoluted tubules. Eye and ear troubles had also been noted, though these were often transitory and affections of the cerebrospinal system appeared to increase after the use of the remedy. No serious effects were produced on the gastro-intestinal tract. The vital organs, he said, should be carefully examined before the drug was resorted to.

Another paper read in the symposium was "The Action of Salvarsan on the Wassermann Reaction," by DR. HOWARD FOX, and in the discussion DR. GEORGE H. FOX spoke of the use of salvarsan in leprosy and psoriasis, citing cases in which it appeared to be of service.

THE RELATIONSHIP OF TABES TO GENERAL PARESIS; ARE THEY THE SAME DISEASE, DIFFERING ONLY IN THE SITUATION OF THE LESION?

By DR. E. D. FISHER, Manhattan. Having pointed out the anatomical lesions in these two diseases, both of which were parasyphilitic or metasyphilitic affections, he said that in one hundred cases of general paresis of cerebral and tabetic type but one presented anything resembling a classical case of tabes. In the two classes of cases he had observed, both in public and private practice, those which approached each other in minor characteristics differed essentially in the more marked symptoms. It was impossible to believe that a disease essentially spinal in its symptoms and pathology, and usually lasting at least twenty years, could be the same (differing only in the seat of its lesion) as a disease commonly limited to three years and whose pathology was essentially cerebral.

THE NERVOUS WOMAN.

By DR. E. B. ANGEL, Rochester. His contention, based on the records of over a thousand private cases, was that nervousness, which he distinguished from neurasthenia (the latter being a true exhaustion neurosis), depends very largely upon a toxemia resulting from disturbances in metabolism. Hence, worry was a symptom, not a cause, of the disorder; nor as causal influences were pelvic disorders as intimately associated with nervousness as generally supposed. The excessive use of proteid food, with intestinal indigestion and inefficient oxidation and elimination of waste products, had caused the trouble in from 70 to 80% of his patients, most of whom had indoor occupations. In two thirds of them there was abdominal distention from fermentation. In the routine examination of the urine, which was apt to be highly acid, he noticed, in a large proportion of instances, that a marked pigment line, dark brown or red, developed at the point of contact with the underlying nitric acid. Before commencing a course of treatment a thorough physical examination of the patient was important, in order to exclude any organic disease which might give rise to the symptoms present.

TAKING THE CURE AT CARLSBAD.

By DR. H. G. WATSON, Manhattan. He gave a lively description of Carlsbad, the life there, and "taking the cure," which consisted of four principal things: Drinking the waters, taking the proper baths, dieting and resting. He also mentioned some of the contra-indications to the Carlsbad treatment.

PARALYSIS OF THE UPPER EXTREMITY DUE TO NERVE INJURY.

By DR. N. JACOBSON, Syracuse. The paper was based upon five cases. The first three concerned injury of the musculospiral nerve, with the characteristic wrist-drop, limited extensor movements of the fingers, and limitation of sensation. Two of them occurred as complications of fracture of the humerus, and the other case was one of nerve injury following a lacerated wound in the lower third and radial side of the arm. In the fourth case a fracture through the neck of the scapula led to displacement inward of the head of this bone, with pressure upon the brachial plexus; and the fifth dealt with a complete division of the fifth cervical nerve from a penetrating wound in the neck. In each instance the resulting paralysis was improved or entirely cured by surgical operation.

THE CLINICAL OBSERVATION OF CARDIAC ARRHYTHMIAS FROM THE MODERN STANDPOINT.

By DR. W. B. JAMES, Manhattan. He described two classes of arrhythmias; one, called rhythmical irregularities, in which there was a fixed interval between the irregularity and the extra-systole to which it belonged, and one in which the irregularity followed no rule whatever. This absolutely irregular pulse, which was due to fibrillation of the auricle, had formerly been considered to offer the worst possible prognosis, but this was not the case. If there was a good ventricle, digitalis could be relied upon to control the auricular fibrillation. On the other hand, the rhythmically irregular pulse was not so amenable to treatment. The paper was illustrated by electrocardiograms taken at the Presbyterian Hospital with the Einthoven string galvanometer, and Dr. James described the apparatus and the method of taking records with it.

*Wednesday, April 19.*

ARTERIOSCLEROSIS, OR THE CARDIOVASCULAR DISEASE.

By DR. L. F. BISHOP, Manhattan. He said he would propose the term "the cardiovascular disease" for that clinical syndrome in which with disease of the heart and blood-vessels there was correlated auto-intoxication, neurasthenia, renal degeneration, etc. Arteriosclerosis he considered an unsatisfactory name because it had become associated with a particular pathological condition of the vessels and thus tended to

divert the attention from the general distribution of the disease. There was a toxic degeneration of the circulatory organs of slow development, often inducing at first lowered blood-pressure and symptoms of neurasthenia, and followed by albuminuria and variable blood-pressure, with a diffused soft systolic murmur heard to the left of the sternum. Later there resulted high blood-pressure, protein intolerance, and definite structural changes in the heart and arteries, and the disease terminated in the typical picture of Bright's disease, with contracted kidney, dilatation of the heart, anasarca and almost complete protein intolerance. The great underlying cause of this whole process he believed to be intestinal putrefaction. At least, in his experience, covering the observation of more than forty thousand specimens of urine, intense indicanuria had always been present except in some advanced cases in which the original cause was not active and the suffering present was due to the acquired structural changes. Much might be accomplished by treatment if the case were not seen too late, and the general plan advocated by the speaker consisted of dietetic, hydriatic and psychotherapeutic management according to Nauheim methods.

### THE SIGNIFICANCE AND THERAPY OF HIGH BLOOD-PRESSURE.

By Dr. J. F. Rooney, Albany. He described three main types of high-pressure cases, — general, splanchnic and nephritic, — with the characteristics of each and the indications for treatment. In speaking of the therapeutics he gave the results of his experience with vasodilators, his conclusions being as follows: (1) The utility of the vasodilators is apparent conversely with the acuteness of the pathological condition. (2) Eliminative measures, hot air, carbon dioxide baths, and catharsis are of much more marked effect in the toxic group of cases. (3) Venesection, which has fallen into undeserved disuse, is of great service in acute toxic cases accompanied by dilatation of the heart. (4) Blood-pressure determinations alone cannot differentiate between tabetic crises and intra-abdominal perforations. (5) The effect of nitroglycerin is as prolonged as any of the nitrite group except erythrol nitrate, and its rapidity of action nearly as great as that of amyl nitrite. (6) The employment of the aconite group as vasodilators is pharmacologically unsound and, except in the toxemia of pregnancy with a strong heart muscle, should be entirely discontinued.

### THE HYDROTHERAPEUTIC TREATMENT OF CHRONIC DISEASE OF THE HEART.

By Dr. J. M. Swan. He especially advocated the Nauheim method, and expressed the opinion that the increased activity of the skin produced by this treatment, with the effect of lessening the resistance of the peripheral vessels, had much to do with the results noted.

### OLIVE OIL IN POST-OPERATIVE VOMITING NAUSEA.

By Dr. C. B. Hyde, Brooklyn. He recommended the administration of two ounces of pure olive oil after all operations, just at the moment the patient begins to recover consciousness. It almost always produced a single explosive attack of vomiting, after which the stomach remained at rest. The effect was equally good, however, if the oil was not vomited.

### CEREBRAL COMPRESSION.

By Dr. E. R. McGuire, Buffalo. He gave an outline of the etiology, diagnosis, localization and surgical treatment of the condition, and cited illustrative cases.

### DEVELOPMENTAL DEFECTS OF THE ABDOMINAL VISCERA AND THEIR SURGICAL SIGNIFICANCE.

By Dr. W. F. Campbell, Brooklyn. As the result of observations in five hundred autopsies, as well as of clinical investigation, it was his conviction that many of the abnormal conditions of the abdominal viscera hitherto regarded as acquired were in reality attributable to developmental defects. In the course of evolution the mesenteries had become shortened, and whereas in the quadruped the abdominal wall acted as a hammock, in the biped it performed the function of a corset. Such conditions as enteroptosis, nephroptosis and Lane's kink, he believed, were the result of developmental defects, and not of wearing corsets. In the treatment of enteroptosis, while mechanical supports had their place, much more attention should be paid to gymnastic exercises than was usually the case. Lane's kink was instrumental in the production of intestinal stasis, simulating chronic appendicitis, and should be treated by operation.

### DEDUCTIONS FROM CLINICAL EXPERIENCE IN THE USE OF A POLYVALENT BACTERIAL VACCINE.

By Dr. J. M. Van Cott, Brooklyn. He had treated 75 cases of infection by this method, of which 35 were erysipelas, 18 puerperal sepsis, and the remainder miscellaneous infections. All the patients were in bad condition at the time the treatment was commenced, and most of them did very well under it. There were, however, two deaths each among the erysipelas and the puerperal cases. Such vaccination was useless where the patient's system was overwhelmed by toxins. He employed intramuscular injections of ½ ccm., or 375 million dead bacteria, and repeated the injections at four days' intervals. More or less muscular discomfort was caused, but no constitutional depression. Stock vaccines, he thought, were preferable to the autogenous, as they were more quickly and readily obtained. His object in presenting this paper, the speaker said, was to bring up the question whether it was advisable for the general practitioner who is not prepared to take the opsonic index or make blood examinations to make use of these vaccines.

### THE SURGICAL TREATMENT OF EXOPHTHALMIC GOITRE.

By Dr. Martin Tinker, Ithaca. No sensible man, he said, would consider it logical to treat tobacco heart or amblyopia and at the same time allow his patient to continue the free use of tobacco. It was just as illogical to treat exophthalmic goitre with drugs without removing the source of the excessive thyroid secretion. Granted that surgical interference was called for, it was certainly of great importance that this should be resorted to before irreparable damage had been done to any of the vital organs. He had done one hundred and fifty-one consecutive operations without fatality. These were not picked cases, and many of the patients were in very bad condition. He had refused to operate in only three instances. In these the cases were hopeless, one dying in twenty-four hours and the other two within three weeks from the time they were seen.

### MUTUAL HELPFULNESS IN THE CONSERVATION OF PUBLIC HEALTH.

In this paper Dr. W. A. Howe, of Phelps, deputy commissioner of the State Department of Health, made a plea for more complete co-operation between the medical profession and the Department. The supplies of the latter, such as vaccine virus, diphtheria and tetanus antitoxins, etc., were always at the dis-

posal of physicians, and the Department was at all times glad to furnish assistance in the way of laboratory investigation, an expert diagnostician or a sanitary engineer.

### MALIGNANT TUMORS OF THE KIDNEY.

By DR. HENRY ADSIT, Buffalo. He said these growths might be divided into five classes: (1) Hypernephroma, by far the most frequent. (2) Carcinoma, extremely uncommon. (3) Mixed tumors occurring in children, not infrequent. (4) Sarcoma, also a disease of childhood, and practically a subdivision of the last group. (5) The very rare condition of papilloma of the pelvis of the kidney. Although hypernephromata occurred in over 90% of all cases, they were the most difficult to diagnose. Their pathology was puzzling, but the weight of evidence was to the effect that they are of epithelial origin and a malignant development of aberrent adrenal tissue. Many cases reported as carcinoma had been found to be hypernephroma. Dr. Adsit had operated in six cases, five of which recovered.

### THE DIAGNOSIS AND OPERATIVE TREATMENT OF RENAL CALCULUS.

By DR. P. M. PILCHER, Brooklyn. In making a diagnosis he warned against the dangers of manipulative procedures. It was necessary to rely chiefly upon the x-ray for determining the location, size and number of calculi, and the extent of renal destruction, when such was present. The paper included a description of the different varieties of stone and the most satisfactory operation for each.

### AUSCULTATION OF THE COUGH.

By DR. A. H. GARVIN, Raybrook. This, he said, was a valuable aid to diagnosis and should be practiced at four different periods of the cycle of respiration. It was of special importance during inspiration as a means of information in advanced stages of tuberculosis.

### EXOPHTHALMOS A COMMON SYMPTOM OF BRIGHT'S DISEASE.

By DR. H. C. GORDINIER, Troy. Curiously enough, he said, this was entirely overlooked in the textbooks, and it was only of late that attention had been called to it in current medical literature. Yet it was a fact that exophthalmos, of varying degree, occurred in nearly one half the cases of chronic nephritis, usually associated with hypertension and without thyroid hypertrophy or marked tachycardia.

### THE PRE-CANCEROUS STAGE.

By DR. PARKER SYMS, Manhattan. The fact was now generally recognized that certain conditions and lesions predispose to cancer. Benign tumors were pre-cancerous factors, and scars, chronic inflammation and ulceration, or almost any cause of prolonged irritation, might prove sources of malignant disease. The importance of thus recognizing such factors as these in the etiology of cancer could not be overestimated, and the early and complete removal of cancer precursors constituted the prevention of cancer in the pre-cancerous stage. The speaker especially urged the extirpation of all mammary tumors as soon as discovered.

### CANCER IMMUNITY IN ITS PRESENT STATUS.

By DR. H. R. GAYLORD, Buffalo. He reviewed the evidence in favor of passive and of active immunity, and said that a certain immunity seemed to be conferred by inoculating an animal with a growth from a different species. It had been found that this immunity was not directed against the cancer cell, but against growth, being entirely independent of the former. The question of vaccination had again arisen, and at the late convention in Paris six cases were reported as cured by this method. In all probability, however, the field for the employment of vaccination would be quite limited, though early cases might be amenable to it.

### INTESTINAL TUBERCULOSIS AND ITS TREATMENT.

By DR. S. G. GANT, Manhattan. Having discussed the relative frequency of primary and secondary tuberculosis of the intestine, he classified the disease into the enteric, entero-peritoneal, stenotic and glandular varieties; after which he referred briefly to the symptoms and diagnostic points of each. Then, after mentioning the most reliable methods for the non-surgical treatment of intestinal tuberculosis, he spoke of the relative usefulness and described the most important points of the technic of colostomy, cecostomy and appendicostomy, and most reliable operations for the relief and cure of this condition; in conclusion, giving the results to be expected from them. He called especial attention to the value of cecostomy, which, when combined with the enterocolonic irrigator, provided a certain means of flushing both the large and small intestine, either separately or together.

### CHRONIC APPENDICITIS: A CRITICAL STUDY OF POST-OPERATIVE END RESULTS.

By DR. E. MACD. STANTON, Schenectady. In studying the post-operative condition of patients operated under the clinical diagnosis of chronic appendicitis, it was found that 96% of the cured cases had, before operation, suffered from attacks of indigestion characterized by symptoms analogous to the earliest symptoms of acute appendicitis. Pain confined chiefly to the right lower quadrant of the abdomen, and not associated with attacks of epigastric pain, was seldom due to the appendix, and, before making a diagnosis of chronic appendicitis, every other possible condition should be excluded. The majority of errors in diagnosis were made in cases characterized by right inguinal pain associated with chronic constipation, where there was an unusually long or dilated cecum with enteroptosis. The paper included an analysis of one hundred cases which had been operated under the clinical diagnosis of chronic appendicitis.

Other papers presented at the meeting were, "Vaccination in the Army," by Col. John Van Hoff, Medical Corps, U. S. A.; "Radiographic Diagnosis of Lesions of the Gastro-Intestinal Tract and Cinematographic Demonstration of the Peristalsis in Normal and Pathological Cases," by Dr. L. G. Cole, Manhattan; "The Prevention of Insanity," by Dr. A. W. Ferris, president of the State Commission in Lunacy; "The Prevention of Gonorrheal Ophthalmia," by Dr. Lucien Howe, Buffalo; "Report of a Case of Gunshot Wound of the Abdomen with Fifteen Intestinal Perforations," by Dr. E. A. Vander Veer, Albany; "A New Method of End-to-End Anastomosis," by Dr. A. L. Soresi, Manhattan.

The following officers were elected for the ensuing year: President, Dr. W. C. Phillips, Manhattan; First Vice-President, Dr. P. W. Van Peyma, Buffalo; Second Vice-President, Dr. W. F. Campbell, Brooklyn; Third Vice-President, Dr. P. R. Hervey, Oswego; Secretary, Dr. W. R. Townsend, Manhattan; Treasurer, Dr. A. Lambert, Manhattan.

## Book Reviews.

*A Manual of Diseases of the Nose, Throat and Ear.* By E. Baldwin Gleason, M.D., Clinical Professor of Otology at the Medico-Chirurgical College, Philadelphia. Second revised edition. Philadelphia and London: W. B. Saunders Company. 1910.

The first edition of this book was reviewed in the Journal of Nov. 21, 1907. This edition has been largely rewritten, and slightly enlarged. The nose and throat occupy about 300 pages, the ear 200, and formulæ and index about 60 more. It is a condensed textbook, in many ways convenient and attractive, generally conservative, but not particularly well balanced. Some important subjects receive scant attention, others do not include the more commonly accepted etiology and treatment. The type is new and the appearance of the book excellent.

*The Cancer Problem. A Statistical Study.* By C. E. Green, F.R.S.E. Edinburgh: William Green & Sons. 1911.

Though prevented from becoming a physician, as he tells us in his Latin apology, Mr. Green has retained from his days as a medical student an interest in the cancer problem, which he has attacked not from the experimental but from the statistical point of view by the deductive method of Sherlock Holmes. From the analogy of plant tumors, he argues that animal cancers are probably due to a fungoid parasite which so stimulates the cells of the host that they become themselves parasitic. This unknown organism should, therefore, be closely akin to the *Plasmodiophora brassicæ* which causes plant cancer. The growth of *Plasmodiophora brassicæ* is especially favored by sulphurous substances, and inhibited by calcium and copper. The human occupations most prone to cancer — chimneysweeps, brewers and furriers — are those most exposed to sulphur derivatives; those most immune — tanners, copperworkers and paper-makers — are those who come most in contact with lime or copper. Moreover, the regions and houses where cancer is commonest are those where coal is burned and where chimneys draw poorly, that is, where $SO_2$ is present in the air. Mr. Green's book seems like an ingenious *tour de force;* but the argument is plausibly drawn, and there is just enough conceivable possibility that it may be right to make it worth reading.

*The Care and Training of Children.* By Le Grand Kerr, M.D. New York and London: Funk & Wagnalls Company. 1910.

This little book, written for "the average busy parent," consists of brief, sensible chapters on clothing, diet, bathing, sleep, education, punishment and other essential elements of life in which children need watchful, intelligent and sympathic guidance and help. Particularly pertinent is the discussion of the physician's duty towards children whose parents are unable or unwilling to give them proper training and care.

*The Physiology of Reproduction.* By Francis H. A. Marshall, M.A. (Cantab.), D.Sc. (Edin.), with a preface by Prof. E. A. Schäfer, Sc.D., LL.D.,F.R.S., and contributions by William Cramer, Ph.D., D.Sc., and James Lochhead, M.A., M.D., B.Sc., F.R.C.S.E. With illustrations. London, New York, Bombay and Calcutta: Longmans, Green & Co. 1910.

This volume is a scholarly and very complete treatise on the physiology of the sexual functions in man and other animals, and possesses, besides, considerable literary merit both in style and in the felicity of the quotations introductory to each chapter. The section on the biochemistry of the sexual organs is written by Dr. Cramer, and the chapters on fetal nutrition and the metabolism of pregnancy by Dr. Lochhead. The illustrations are many and excellent. Though addressed primarily to biologists, the book should be of interest and value also to physicians and to that new and growing class of philosophers and publicists who are concerned with the science and art of eugenics.

*Radium.* Its Physics and Therapeutics. By Dawson Turner, B.A., M.D., F.R.C.P. Edin., M.R.C.P. Lond., F.R.S. Edin. New York: William Wood & Co. 1911.

This book aims to present in compact form the known facts about the physical phenomena of radio-activity, and the methods, indications and value of its use in the treatment of disease. It is well written and illustrated and should prove a serviceable manual of this new and important subject in medicine.

*Internal Secretions from a Physiological and Therapeutical Standpoint.* By Isaac Ott, A. M., M.D. Easton, Pa.: E. D. Vogel. 1910.

This small volume presents three lectures delivered by the author before students of the Medico-Chirurgical College, Philadelphia, on the internal secretions of the parathyroids and of the hypophysis, and on the correlation of glands with an internal secretion. It is a timely and useful contribution to the study of a subject which is attracting considerable present medical interest.

*The Proceedings of the Charaka Club.* Volume III. New York: William Wood & Co. 1910.

This beautifully printed limited edition of the proceedings of this interesting organization presents a number of illustrated essays by its distinguished members on topics whose variety of nature and treatment shows that breadth of interest and literary ability are not incompatible with professional eminence in medicine. "*Dulce est dissipere in loco,*" and in selecting the groves of Academe for their "dalliance with the Muses," these "Children of the Sage" have given pleasure not only to themselves but to those who are fortunate enough to be their privileged readers.

Such a volume goes far to remove the reproach of professional engrossment, often visited upon physicians as a class, and to prove, if one may adapt a quotation from Shakespeare, that "men may be doctors and yet human, too."

*Gynécologie Opératoire.* Par HENRI HARTMANN, Professeur de Médecine opératoire à la Faculté de Médecine. Avec 422 figures dans le texte dont 80 en couleur. Paris: G. Steinheil, editeur. 1911.

This is a book of 498 pages. Although the text is devoted largely to the subject of operative gynecology, as the title indicates, Part I, pages 1–87, is given up to the examination and chapters on minor gynecology, electrotherapy, symptoms, hydrotherapy and massage, and here and there throughout the work are chapters on local treatment, replacement of the uterus, etc. Foreign authors are quoted freely, and their operations described.

In the portion on plastic operations on the cervix and the walls of the vagina, the usual excellent practice in this book of placing the rarer operations in a supplementary chapter at the end has been forsaken, and many obsolete operations, such as the Freund operation for prolapse, have been scattered through the text. Altogether this is one of the most unsatisfactory portions of a good book.

The colpotomies, the removal of fibroids by the vagina, vaginal hysterectomy, as well as hysterectomy by the paravaginal route, and Oui's operation for inversion, are described satisfactorily and fully. The Alexander operation, on the other hand, is inadequately described, and the figures are poor, and the same is true of abdominal hysterectomies for chronic metritis and fibroids. Hysterectomy for cancer and the operations on the tubes, ovaries and uterine ligaments are well treated.

An attempt has been made to cover the ground of the effect on subsequent pregnancy of operations on the cervix and on the uterus for fibroma. The book closes with chapters on the disorders of menstruation, sterility, the surgery of the urinary organs, and the treatment of fistulæ, all handled briefly but well.

*Common Practical Therapeutics.* By ALBERT ROBIN, Professor of Clinical Therapeutics in the Faculty of Medicine at Paris; Member of the Academy of Medicine. Paris: Vigot Frères. 1910.

This volume by Dr. Robin, written with charming and customary Gallic lucidity of style, presents the author's lectures on therapeutics at the Beaujon Hospital. Under the general headings of diseases of the stomach, intestines, liver, kidneys, vessels, and nerve-system, he considers the principles and details of treatment of a large number of the common ailments of mankind, serious and trivial. Not all his methods are in accord with American therapeutic custom, but as a manual of French practice his volume should be of value to students and to physicians.

THE BOSTON
# Medical and Surgical Journal.

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## THE PASSING OF A MEDICAL LANDMARK.

THE old building of the Harvard Medical School on North Grove Street, now the property of the Massachusetts General Hospital, is being torn down to make way for a new structure. The passing of this familiar medical landmark in Boston removes one more of the visible ties that unite us with a distinguished past. This building was erected in 1846 on a site of land given for the purpose on Feb. 28 of that year by George Parkman.

Since its removal to Boston from Cambridge early in the nineteenth century, the Harvard Medical School had been established on Mason Street. Here, despite conflicts with the Berkshire Medical Institution and sundry private medical schools, it had thriven, so that, in 1845, its records state with satisfaction that "the faculty are willing to consider the increased number of pupils (one hundred and fifty-seven) in this institution, which has doubled within the last five years, as an evidence that the advantages which they offer to the candidates for medical degrees are becoming appreciated by the community, and it gives them pleasure to add that they believe a greater number of teachers for the different medical schools in the United States in proportion have been taken from their graduates than from any other medical institution in this country. They think that they have a right to regard this as some evidence of the success of their endeavor to give a thorough course of medical instruction." As the course then required for a degree in medicine was three years, the classes in 1845 were of approximately the same size as at present.

Owing to this rapid increase in numbers, the building on Mason Street became cramped and inadequate. Accordingly, on April 11, 1846, the

Harvard Corporation voted "to sell the Mason Street estate and use the funds for the erection of a new building for the Medical School on the land presented by Parkman." At this time the only structure nearby was the Bulfinch Building of the Massachusetts General Hospital, by whose westerly end flowed the Charles River; and it was wisely intended that school and hospital should develop in the normal contiguity which befits their close association. To provide for the construction of the new school the Corporation further voted: "That in case the proceeds of the sale of the estate in Mason Street shall not be sufficient to complete the new building on Grove Street according to the plans adopted, the treasurer be, and he is hereby authorized, to spend a further sum not exceeding five thousand dollars for the purpose, provided that the professors of the Medical School shall by a suitable instrument in writing signed by them pledge to the college such portion of the fees received by them from the medical students as shall be sufficient to pay the interest on said sum advanced by the treasurer . . . at the rate of six per centum per annum payable semi-annually until the said sum shall be reimbursed to the college treasury." One cannot help wondering what would happen now if members of a medical faculty were asked to help pay for a new school building out of their salaries.

Like most new buildings, the North Grove Street school cost more than had been anticipated, and in 1847 the treasurer was authorized to expend for its completion a further sum not exceeding nine thousand dollars, and the professors bound in surety to pay, not only the interest as before, but the principal as well. The building was finished and occupied in the same year, and continued to be used until the removal of the school in 1883 to the building on the corner of Boylston and Exeter streets.

The year in which the school became established on North Grove Street was one of moment in its history. On Feb. 15, 1847, Dr. J. C. Warren resigned his position as Hersey Professor of Anatomy and Surgery. On April 3, 1847, the title of this chair was changed to that of Hersey Professor of Anatomy, and Jeffries Wyman was elected to fill it. The Corporation further created two new professorships, with the titles Professor of Pathological Anatomy and Parkman Professor of Anatomy and Physiology, and appointed to them respectively John Barnard Swett Jackson and Oliver Wendell Holmes. In September, 1847, Walter Channing resigned as Dean of the school, and on Oct. 2 Holmes was appointed in his place. At the opening of the school in the new North Grove Street building, therefore, began the professorial and administrative career of some of its most distinguished teachers.

The early history of the school at North Grove Street was also associated with numerous episodes of interest and importance in connection with local tradition and the development of medical education, many of which are described at length in Harrington and Mumford's "History of the Harvard Medical School," from which the above quotations have been taken. The demonstration of surgical anesthesia by ether took place while the new building was in process of erection, and gave an immense impulse to popular and professional interest in the possibilities of medical science. The Harvard School began the work of medical education in its new quarters with a brightness of prospects which not even the sinister events of the Parkman murder in 1849 could long obscure. For thirty-seven years this building served the needs of medical education in Boston. It was the school of the fathers of the present medical generation, of the men who created the temper and ideals of our profession in Boston. When the Medical School was removed to Boylston Street, the Grove Street building was used for twenty-five years by the Harvard Dental School. On the removal of the latter to its new building on Longwood Avenue, in 1908, the Grove Street building was acquired by the Massachusetts General Hospital and has stood vacant since that time.

The demolition of this historic building marks the close of an epoch in the history of medical education. Opened at the beginning of a new era in medicine, it has been associated with many distinguished names and some notable events. Its story will soon be only a memory, but the work done within its walls has passed permanently into the fabric of the profession and has led to results and achievements that can never perish.

## NATURE AND EUGENICS.

THE wail of the eugenist is at present loud in the land. Everywhere he sees the fit perish by race suicide and the unfit increase and multiply exceedingly and survive to inherit the earth: and great are his grief and despondency thereat. Doubtless it is true that one may observe many highly specialized and efficient individuals upon whose evolution the labor, conscious and unconscious, of preceding generations had been expended, failing to reproduce themselves and secure

the benefits of their valuable germ-plasm to succeeding ages. This may seem, and no doubt often is, very wasteful and unfortunate. But then many natural processes are wasteful, and the question rises whether the loss is really so great as it appears, since somehow it seems generally to be made good from below. Irresistible aspiration is one of the beneficient provisions by which nature keeps her stock of germ-plasm from permanent deterioration.

Now it is a fairly well-established fact that any living strain bred exclusively from its own like tends after a certain time to retrograde. Barring a few exceptional instances, it seems impossible for a high grade of evolution to be maintained long in a pure stock without retrogression or extinction. Retrogression in such cases is the provision by which such stock is mercifully enabled to preserve itself by merging again with the common welter of existence. If extinction be the choice, it may be tragic, but it may also be for the best. At any rate, it is probably not always the dire calamity which it is considered by the eugenist. For out of the undifferentiated sea of humanity is always raised up new material to take the place of that which has been lost, to assume the duties of evolution and to discharge them with the rejuvenated vigor and zest of new experience.

The possible fallacy in eugenics lies in regarding the loss of a good type as an unmixed evil. There is no proof that it is necessarily so. Nothing in human evolution is stable. It is dependent for its very nature and existence on the perpetual flux and flow of incessant kaleidoscopic recombination. The highly specialized, carefully elaborated form perishes, but before dying it has done its work, and that is enough. One may lament the loss of the type, of the finished experiment, but nature "looks and laughs at a' that." She cares nothing for the individual who tops above his fellows, she cares only for the slow improvement of the undifferentiated type. With her all is experiment, and from the alchemic crucible of her laboratory she can produce new types, different perhaps from those which have passed away, but better adapted to their changing environment. The process is as perennial and immortal as life and romance:

> "In dock and deep, and mine and mill,
> The Boy-god reckless labors still."

Let us then take heart in spite of the eugenist's lamentations. For we may courageously refer him to the superb examples which time has afforded of the replacement of lost types with better; and, by way of refutation, may bid him

> "Fear not lest existence, closing your
> Account and mine, should know the like no more;
> The eternal Saki from that bowl has poured
> Millions of bubbles like us, and will pour."

Time may and will efface the "cunning'st pattern of excelling nature," but she will excel herself again, and out of the common earth will fashion a new type, nobler and fitter than its predecessor.

## THE ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY.

THE Massachusetts Medical Society has just published the program of the annual meeting to be held on Tuesday and Wednesday, June 13 and 14. The meetings will be held in the buildings of the Harvard Medical School, except the Shattuck Lecture, which will be in John Ware Hall, at the Boston Medical Library, as in former years; the dinner, which will be in Symphony Hall, and an afternoon tea and demonstrations at the Tufts College Medical School, on Huntington Avenue. There will be many demonstrations and exhibits in the different laboratories of the Harvard Medical School during both days of the meeting and special efforts have been made to have full and attractive programs of the meetings of the Sections. Tuesday morning the Section of Medicine will give a symposium on Salvarsan from the clinical standpoint, seven papers and demonstrations. At the same time the Section of Surgery will give a symposium on Anesthesia, four papers and demonstration of apparatus, and two papers on fractures. In the afternoon of Tuesday the Section of Medicine will hold a symposium on circulatory disorders, four papers, and the Section of Surgery a symposium on surgical diseases of the kidney, four papers, and papers on surgical treatment of pyloric stenosis and malignant disease of the large intestine. The Section of Tuberculosis will hold a symposium on outdoor schools and open-air rooms for children on Tuesday afternoon beginning at 2 P.M.

The Shattuck Lecture Tuesday evening will be by Dr. R. C. Cabot.

At the annual meeting on Wednesday morning Dr. George W. Gay will read a paper on suits for alleged malpractice, and E. H. Bradford and W. J. Collins on the treatment of spinal curves and co-existent epidemic cerebrospinal meningitis and malaria respectively. Dr. M. H. Richardson will give the annual discourse.

The annual dinner will be given in Symphony Hall at one o'clock and following the dinner the annual ball games between nines from the different district societies will be held at one of the country clubs near Boston, the members being taken there in electric cars. The challenge cup is now held by the nine from the Middlesex South District Society, and it is understood that preparations are being made by the rival nines to wrest the cup from them.

## EXPEDITION TO STUDY MOUNTAIN SICKNESS.

It is announced that during the months of July and August in the coming summer, an expedition will be made to Pike's Peak, Colorado, for the purpose of making extensive studies of mountain sickness. The investigations are to be under the direction of Dr. Yandell Henderson, assistant professor of physiology at the Yale Medical School. With him will be associated two English physicians, Dr. J. S. Haldane, brother to the present British Secretary of State for War; and Dr. C. Gordon Douglas. Dr. Haldane is regarded as an authority on caisson disease. Dr. Douglas, who is a Fellow of St. John's College, Oxford, took part recently in similar international Anglo-German medical investigations at Teneriffe, in the Canary Islands. Dr. Edward C. Snyder, of Colorado Springs, Colo., will also assist in the work. It is hoped that results of definite value may be obtained by this experimental research in a disease whose nature is not as yet fully understood.

## WORK OF THE ARMY MEDICAL CORPS IN THE ERADICATION OF SMALLPOX.

In the issues of the JOURNAL for March 23 and May 4, we referred editorially to the eradication of smallpox from the Philippine Islands and from Cuba since the occupation of these territories by the United States in 1898. In commenting on the part performed in this work by the Public Health and Marine-Hospital Service, it was not our intention to withhold due credit also from the United States Army Medical Corps, under whose officers, indeed, systematic vaccination and quarantine were first begun in Cuba. In Porto Rico, too, successful efforts to eradicate smallpox were carried out, immediately after the American occupation, under the chief surgeon of the Army Medical Service in that island. This work of army medical officers in Porto Rico, and under Gen. Leonard Wood in Cuba, is described at length in the annual report of the Surgeon-General of the Army to the Secretary of War for the year ending June 30, 1899. The extermination of this endemic pestilence is one of the most beneficent results of the Spanish War, and the labor and enterprise of United States Army surgeons in its accomplishment should not be forgotten in recording so great and creditable an achievement.

## MEDICAL NOTES.

APPOINTMENT OF HARVARD EXCHANGE PROFESSOR. — Report from Breslau, Prussia, states that, on May 10, Dr. Willy Kukenthal, professor of zoölogy in the University of Breslau, was appointed exchange professor at Harvard University for the academic year 1911–12.

SCHOOLS FOR MOTHERS IN ENGLAND. — It is stated that there are now, in various British municipalities, eighty schools for mothers, in which the principles of hygiene and infant care are taught to women of all classes. The largest and most important of these are at Birmingham, Sheffield, Cardiff, Glasgow, Dundee and Bath.

SMALLPOX QUARANTINE AT KEY WEST. — Report from Key West, Fla., states that the schooner *Horatio G. Foss* is quarantined at that port with a case of smallpox aboard. This vessel, which is owned in Boston, sailed on April 29 from Mobile, Ala., for Porto Rico.

A LIVING ENGLISH CENTENARIAN. — On April 5, Mr. Augustus Gordon Hake, of Brighton, England, celebrated the supposed centennial anniversary of his birth. He is said to have been born in 1811, at Exeter, England. He was called to the bar in 1835, and is at present believed to be the oldest living barrister. He practiced his profession until recently and is said to be still in excellent health. He has been a resident of Brighton for the past sixty years.

AMERICAN THERAPEUTIC SOCIETY. — The twelfth annual convention of the American Therapeutic Society was held in Boston on May 11, 12 and 13 of last week. The sessions were at the buildings of the Harvard Medical School. The annual address was delivered by the outgoing president, Dr. Harvey W. Wiley, of Washington, D. C., on the subject of "Alcohol as a Medicine and as a Beverage." Dr. Alexander D. Blackader, of Montreal, P. Q., Canada, was elected president of the society for the ensuing year.

OHIO STATE MEDICAL ASSOCIATION. — The sixty-sixth annual meeting of the Ohio State Medical Association was held on May 9, 10 and 11 of last week at Cleveland, Ohio. At the general meeting on Wednesday, May 10, the annual address in medicine was delivered by Dr. Hobart Amory Hare, of Philadelphia, on "The Danger and the Duty of the Hour," and the annual address in surgery by Dr. J. Chalmers Da Costa, of Philadelphia, under the title "Behind the Office Door." At meetings of the various special sections, papers were read by the following physicians, now or formerly of Boston: Dr. Charles M. Green, Dr. Richard Dexter and Dr. G. Bourne Farnsworth. On Thursday, May 11, were held the graduating exercises of the Lakeside Hospital Training School for Nurses.

THE MEDICAL LIBRARY ASSOCIATION. — The fourteenth annual meeting of the Medical Library Association was held May 9 and 10, 1911, at the Marlborough-Blenheim Hotel, Atlantic City.

The first session was held Tuesday evening and the following program was carried out: President's address, Dr. J. H. Musser, Philadelphia, Pa. Papers: "Hospital Records in Relation to the Hospital Librarian," Mrs. Grace W. Myers, Boston, Mass.; "The Establishment of Medical Libraries in County Medical Societies," Dr. Carl Black, Jacksonville, Ill.; "The Changes in Medical Periodical Literature since January, 1909," Mr. C. Perry Fisher, Philadelphia, Pa.

The second session was held the morning of May 10. The meeting considered the reports of the various committees and the election of the officers.

A FALLACIOUS ARGUMENT FOR LIMITATION OF OFFSPRING. — On Thursday, May 11, was opened, at Chicago, a Child Welfare Exhibit, intended to illustrate the various progress that has been made in the science and art of improving the health and securing the hygienic development, education and training of children. The exposition will continue for a fortnight. In the health section of this exhibit, as an argument in favor of the limitation of families, is said to be posted a placard bearing the words: "The bigger the family, the higher the death-rate among the children." In support of this statement are adduced figures from investigations made by Dr. Alice Hamilton among sixteen hundred families in the slum districts of Chicago, indicating that "in families of four children the death-rate is 118 per thousand, in families of six the rate is 267 per thousand, and in families of eight it is 291 per thousand."

To prevent the suggested fallacious and erroneous interpretation of these statistics, it should be pointed out that they represent a survival of three and one half from each family of four children, four and two fifths from each family of six, and five and two thirds from each family of eight, indicating a net gain in numbers to the community from larger families, and constituting, therefore, in reality an argument for the desirability of increasing rather than decreasing the number of children.

## BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, May 16, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 36, scarlatina 35, typhoid fever 8, measles 236, smallpox 0, tuberculosis 68.

The death-rate of the reported deaths for the week ending May 16, 1911, was 19.45.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, May 13, 1911, was 264, against 202 the corresponding week of last year, showing an increase of 62 deaths, and making the death-rate for the week, 19.98. Of this number 138 were males and 126 were females; 252 were white and 12 colored; 166 were born in the United States, 93 in foreign countries and 5 unknown; 57 were of American parentage, 169 of foreign parentage and 38 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 28 cases and 3 deaths; scarlatina, 35 cases and 2 deaths; typhoid fever, 4 cases and 0 deaths; measles, 238 cases and 5 deaths; tuberculosis, 82 cases and 20 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 42, whooping cough 9, heart disease 25, bronchitis 2. There were 22 deaths from violent causes. The number of children who died under one year was 45; the number under five years, 79. The number of persons who died over sixty years of age was 62. The deaths in hospitals and public institutions were 110.

APPOINTMENT OF DR. BREARTON. — It was announced last week that Dr. Edward J. Brearton, of Dorchester, has been appointed as assistant to Dr. Arthur H. Davison, examining physician to the Boston Department of Public Works.

Bequests to Waltham Hospitals. — The will of the late Charles H. Houghton, of Waltham, Mass., which was allowed last week before the Middlesex Probate Court, provides that the residuary estate, which it is estimated will amount to $14,500, shall be divided equally between the Waltham Hospital and the Waltham Baby Hospital.

Ringworm Epidemic at Clinton. — Report from Clinton, Mass., states that an epidemic of ringworm has appeared in one of the local schools. There are said to be at present thirty-two cases of the disease. The school building has been fumigated and all infected pupils are quarantined at their homes.

A Memorial Hospital at North Conway, N. H. — The trustees of the New Memorial Hospital at North Conway, N. H., have issued invitations for the opening of the hospital on Thursday, May 18. Addresses are expected from Governor Bass, of New Hampshire; from Dr. Charles W. Eliot, and from Dr. Arthur T. Cabot.

Metropolitan Dental Hospital Association. — The first dinner of the Metropolitan Dental Hospital Association, held in Boston on Tuesday evening, May 9, was attended by forty members. Dr. F. S. Belyer, the principal speaker, described the history and work of the society, which, since its organization in 1909, has provided free dental treatment for 2,500 poor children of this city. The officers of the association are Dr. J. W. Werner, president, and Dr. Sergius Crosby, secretary.

Nomination of Dr. Mullowney. — Last week the mayor of Boston nominated Patrick H. Mullowney, M.D.V., at present chief of the dairy inspection bureau of this city, to the position left vacant on the Boston Board of Health by the death of Mr. Frederic O. North, in July, 1910. Dr. Mullowney was born in Boston in 1870, studied at Boston College and received his veterinary degree from Harvard in 1891. His appointment has not yet been confirmed by the Civil Service Commission.

Protection of Foodstuffs in Boston. — In recent issues of the Journal we have made various comment on the attempt of the Boston Board of Health to enforce its regulation relative to the protection of foodstuffs exposed for sale in this city. During the past week, it is said, the mayor has requested the members of the Board personally to visit the markets on Saturday afternoon and evening, to determine whether or no it be really desirable to insist on this enforcement, in view of the hardship it is alleged to cause to dealers. In spite of this intervention, there has as yet been no announcement by the Board of intention on its part to desist from the action which it has advisedly taken.

Appointment of Mr. Whipple as Professor of Sanitary Engineering. — It was announced on May 11 that Mr. George Chandler Whipple, of New York City, has accepted an appointment as professor of sanitary engineering at Harvard College. He was born at New Boston, N. H., on March 2, 1862, and graduated from the Massachusetts Institute of Technology in 1889. For eight years he served as chief of the Biological Laboratory of the Boston Water Works at Chestnut Hill. Subsequently he went to Brooklyn, where he had charge of the investigation of water supply for the new metropolis of Greater New York. He is a member of many scientific and technical societies, and is recognized as an authority in public sanitation.

Plans for New Malden Tuberculosis Hospital. — It is reported that last week, on request of the Malden Medical Society and the Malden Associated Charities, the finance committee of Malden, Mass., voted to recommend the appropriation by the local city government of $12,000 for the erection of a new tuberculosis hospital to accommodate twenty-four patients. This project has been under consideration for several years. The plans provide for a wooden building to be located near the Malden Contagious Hospital. One heating plant will be used for both institutions. "The main building will be two stories high, containing the kitchen and laundry in the basement, administration offices and dining-rooms for nurses and patients on the first floor and seven rooms for nurses and the matron on the second. On each side of the main building there will be a one-story wing, one for men and one for women, each containing twelve beds. The plans are somewhat similar to those of the Somerville hospital."

Two Recent Cases of Leprosy. — In last week's issue of the Journal we chronicled the discovery of a case of leprosy at Pawtucket, R. I., and the attempt of the health authorities of that state to obtain permission from the Massachusetts State Board of Charity to have the patient received at the leper colony on Penikese Island. This request has been denied, and the

boy has since remained in quarantine at his own home, pending such arrangements as can be made for his permanent care elsewhere. Meantime, during the past week, there has been reported in Boston another case of leprosy, in the person of a Sicilian woman, forty-three years of age, who has been resident in this city four years. She has been removed temporarily to the city detention hospital, and the house where she was living has been fumigated. Despite the desirability of rigid precautions to prevent the spread of leprosy, the popular dread of it as an almost supernatural evil is quite incommensurate with the actual risk of its extension. The terror with which it is regarded is largely a survival of scriptural tradition and medieval experience.

NEEDS OF THE INFANTS' HOSPITAL. — The new building of the Infants' Hospital, near the Harvard Medical School, is making rapid progress towards external completion. Only the outer walls can be finished at present, however, since a considerable further sum of money is needed for the interior construction, equipment and future maintenance of the institution. It is earnestly hoped by those interested in the work of the hospital that this sum may be raised at an early date, in order that the erection may be continued and the building opened as soon as possible. On Wednesday of next week, May 24, a meeting will be held at the Harvard Medical School to consider the financial needs of the institution and ways and means of meeting them. Addresses are to be made by President Eliot, President Lowell, Bishop Lawrence and Dr. J. Collins Warren. It is to be hoped that this meeting may be well attended and that the friends of public philanthropy may be induced to contribute as liberally as they can to this valuable and beneficent medical charity.

TRIENNIAL CATALOGUE AND DIRECTORY OF THE MASSACHUSETTS MEDICAL SOCIETY. — The Massachusetts Medical Society publishes this week its Triennial Catalogue and Directory dated Jan. 1, 1911. This catalogue contains for the first time the street and number of the office addresses of the Fellows, besides giving, as in the past, the residences of the Fellows and the year in which each joined the society. The Fellows are enrolled in the District Societies, as always, according to their legal residences, but because of the growing practice, made possible by the automobile and other improved means of transit, of physicians living in one place and having their offices in another, there is a movement on foot in the society to permit members to elect with which District Society they will be affiliated. Special pains have been taken to have this directory accurate, but as the office addresses appear for the first time, there may have been some misunderstanding on the part of the Fellows and the residence addresses may be given instead of the office addresses in some instances.

The local list of Fellows has been much improved over past catalogues by the omission of the post offices in the state where no Fellows reside and by inserting under the heading of each city or town the subdivisions or post offices included in that city or town and by listing separately these subdivisions. For instance, West Newton appears now under W. instead of under Newton. From the statistical tables it appears that the society has now 3,332 Fellows as against 3,223 Jan. 1, 1908.

## NEW YORK.

TRAINING SCHOOL FOR DOMESTIC NURSES. — A feature of the new Union Hospital in the Bronx will be a training school for nurses which, like the nurses' school that for some time past has been in successful operation in Albany, is designed to furnish efficient nurses for persons in moderate circumstances. The length of the course of training, which has not yet been definitely fixed, will probably be six months, and, in any event, will not exceed one year, and, in order to distinguish the graduates from those of schools in which a full course of two or three years is given, they will be termed, not trained nurses, but domestic nurses. The rate of compensation they will be allowed to charge will be about $12 a week. The school will have the advantage over the similar one in Albany of being conducted in connection with a large general hospital, the Albany institution being on an independent basis. This new departure in hospital training schools will be watched with much interest, and it would seem quite probable that the plan may be adopted by some other hospitals.

VITAL STATISTICS FOR MARCH. — The State Department of Health reports that in March the number of deaths in the state reached a total of 14,227. The only other months in which the mortality previously amounted to as much as 14,000 were March, 1904, and March, 1910. This excessive death-rate is attributed largely to influenza, and in the first three months of the year the number of deaths from all causes exceeded those in the first quarter of 1910 by 1,300.

On the other hand, the high mortality in the state at large during March was offset by the large number of births reported in New York City. In the latter the deaths were only two thirds the number of births; so that while in the rest of the state the deaths slightly exceeded the births, in the city of New York there was a gain in native population of 4,617.

Tuberculosis Preventorium in New Jersey. — In furtherance of the plans for the full development of the Tuberculosis Preventorium in New Jersey, contracts have just been let for the erection of four fireproof dormitories, an administration building and a power plant on the hundred acres donated by the Arthur Brisbane estate, in the woodlands near Farmingdale, and it is in contemplation to construct two additional buildings as soon as the necessary funds have been secured. Adjoining this tract is the Brisbane stock farm of two hundred acres, on which the preventorium has a twenty-five-year lease, so that abundance of fresh air is assured for the inmates. The estimated cost of the six buildings now contracted for, which are designed to accommodate 130 children, is $100,000, and the total amount of the building fund is at present $102,000. Of this, $50,000 has been given anonymously through Mrs. J. Borden Harriman, first vice-president of the Preventorium; Nathan Strauss has given another $50,000, and Jacob H. Schiff and Felix M. Warburg have each subscribed $1,000. Since its removal from Lakewood, where it was started by Mr. Strauss in the Cleveland cottage, the work of the institution has been carried on at the farmhouse on the Brisbane estate, and up to the present, some 250 children have been treated there.

Health Statistics. — The weekly reports of the Health Department show that during the month of April the mortality in the city represented an annual death-rate of 17.54, as against 17.73 in March and 17.56 in April, 1910. The corrected death-rate, excluding non-residents and infants under one week old, was 16.51. Among the diseases which showed a diminished fatality were the following: The weekly average of deaths from typhoid fever declined from 6 in March to 4.75 in April; the weekly average from diphtheria and croup, from 35.5 to 34.75; from influenza, from 16.25 to 11.25; from epidemic cerebrospinal meningitis, from 7 to 5.75; from diarrheal diseases, from 64.75 to 63; from diarrheals under five years of age, from 62 to 58; from organic heart diseases, from 165.25 to 156.75; from cirrhosis of the liver, from 29.25 to 22.25; from Bright's disease and acute nephritis, from 128 to 124.75; and from puerperal diseases, including septicemia, from 16.75 to 13.5. Among the diseases in which there was an augmented mortality were the following: The weekly average of deaths from scarlet fever increased from 29 to 32.25; from whooping cough, from 7.25 to 8.75; from pulmonary tuberculosis, from 182.75 to 195.75; from pneumonia, from 166.25 to 172.25; from apoplexy and softening of the brain, from 24.75 to 28.25; and from appendicitis and typhlitis, from 10 to 14.75.

## Current Literature.

### Medical Record.

May 6, 1911.

1. *Watters, W. H., and Eaton, C. A. *The Vaccine Treatment of Typhoid Fever.*
2. Bishop, L. F. *Fibrillation of the Auricle.*
3. Hübner, M. *Intravesical Irrigation in Acute Gonorrhea.*
4. Lanphear, E. *Perforating Wounds of Uterus, with a Report of Twenty Cases.*
5. Flagg, P. J. *The A–B–C of Ether Administration.*
6. Trimble, W. B. *Impressions as to the Value of Salvarsan.*
7. Ohlbaum, J. *An Unusual Case of Placenta Previa.*

1. Watters and Eaton report thirty-five cases of typhoid fever, treated with typhoid vaccine. The initial dose was generally between twenty and thirty million bacilli and subsequent doses were a little smaller. The more serious the clinical symptoms the smaller the dose employed. No aggravation or injury of any kind was demonstrable as a result of any inoculation. The writers conclude that vaccines properly used are innocuous in typhoid fever, that they reduce mortality, shorten the duration of the disease and render relapse less liable. In one case, after a single inoculation, the temperature fell by crisis and convalescence was steady and uninterrupted. [L. D. C.]

### New York Medical Journal.

May 6, 1911.

1. Fordyce, J. A. *An Analysis of the Clinical and Serological Results Obtained in the Treatment of One Hundred and Seventy-Five Cases of Syphilis with Salvarsan.*
2. Pedersen, V. C. *Therapeutics of Syphilis.*
3. Summers, J. E. *Typhoidal Cholecystitis.*
4. Knowles, F. C. *Varicella of a Hemorrhagic and Gangrenous Type.*
5. Rose, A. *An Important Factor in Circulation.*
6. Pfahler, G. E. *Cinematographic Demonstration of Normal Gastric Peristalsis and the Part these Waves Play in the Diagnosis of Cancer of the Stomach.*
7. Goldman, A. *Test Breakfact Versus Fasting Stomach Contents.*
8. Fischer, C. S. *A Possible Source of Error in Gastric Analysis.*
9. Green, W. *Quinine and Urea Hydrochloride as a Local Anesthetic.*

### The Journal of the American Medical Association.

May 6, 1911.

1. Knopf, S. A. *Robert Koch, the Father of Modern Tuberculosis Science.*
2. Sutton, J. M. *A Clinical Study of Sporotrichosis.*
3. Throckmorton, T. B. *New Method for Eliciting the Extensor Toe Reflex.*
4. Harker, H. J. *A Case of Sporotrichosis in Man.*

5. *HERB, I. C. *Administration of General Anesthetics with Special Reference to Ether and Chloroform.*
6. PATCH, A. J. *Family Pernicious Anemia.*
7. HARRIS, M. L. *What should be the Attitude of the State toward the Practice of Medicine?*
8. *HESS, A. F. *The Subsequent Health of Children who Drank Milk Containing Tubercle Bacilli.*
9. *PAYNE, R. L. *Surgical Relationship between Uterine Fibroids and Loss of Cardiac Compensation.*
10. VERHOEFF, F. H. *An Improved Elastic Tissue Differential Stain.*
11. LOEB, L. *The Parthenogenetic Development of Ova in Mammalian Ovary and the Origin of Ovarian Teratoma and Chorio-Epitheliomata.*
12. CONNOR, J. H. *A Rare Manifestation of Empyema Necessitatis.*

5. Herb protests against the routine giving of drugs before anesthesia. In certain cases only is it an advantage. As a routine it should be condemned. Alarming respiratory depressions may result from the use of morphia or scopolamin before ether or chloroform. Pupillary reflexes are often disturbed after morphia or atropin so that the degree of anesthesia is obscured. In mouth operations this practice is especially to be condemned as the reflex excitability of the air passages is abolished, and thus the retention or aspiration of blood is favored. Morphia often increases the post-anesthetic vomiting.

8. Hess, writing of the subsequent health of children who drank milk in which tubercle bacilli were demonstrated, states that of eighteen children, all but one remained free from active tuberculosis during a period of supervision of three years; this one developed tuberculosis of the cervical glands, from which a bacillus of the bovine type was cultivated. From animal experiments he concludes that the chance of infection through milk depends not only on the number of bacilli ingested, but also on the frequency of exposure to small infections, for a quantity of bacilli which was insufficient to produce tuberculosis in guinea-pigs when given in one dose, suspended in milk, was able to incite tuberculosis when fed in twenty-five to thirty doses on as many days. Tubercle bacilli in butter as well as in milk are a menace to health.

9. Payne points out that in a large percentage of cases of uterine fibroids there are present symptoms of cardiovascular disturbance. The size of the growth has no relation to the severity of the cardiac disturbance; symptoms have been apparent while the growth was still small. In some cases of lost cardiac compensation associated with fibromyomata, the symptoms are materially benefited by removal of the growths, but in some cases are so severe as to result in sudden death following operation.

[E. H. R.]

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

APRIL, 1911.

1. *CUSHNY, A. R. *The Therapeutics of Digitalis and Its Allies.*
2. GOLDENBERG, H., AND KALISKI, D. J. *Personal Experiences with the Use of Salvarsan ("606") in the Treatment of Syphilis.*
3. *WIGGERS, C. J. *The Physiology of the Pituitary Gland and the Actions of Its Extracts.*
4. *THOMAS, T. T. *Stiff and Painful Shoulders, with Loss of Power in the Upper Extremity.*
5. HOSKINS, R. G. *The Interrelation of the Organs of Internal Secretion.*
6. CADWALADER, W. B. *The Sudden Onset of Paralysis in Pott's Disease, without Deformity of the Vertebræ.*
7. OPPENHEIMER, B. S. *The Pathological Findings in the Parathyroids in a Case of Infantile Tetany.*
8. MCFARLAND, J. *Sarcoma of the Vagina.*
9. *WALSH, J. *Prognosis of Tuberculous Lesions, Involving the Whole of or More than One Lobe.*

1. Cushny's article is the result of studies of patients with heart disease treated with digitalis and other drugs in Mackenzie's clinic. The action of digitalis has been described ever since its investigation by Traube as, in part, inhibition from the medulla and, in part, direct stimulation of heart muscle. The ventricle is more affected by the direct muscular action, and the auricle more by the central inhibitory action. As a result of his own and of Mackenzie's studies, Cushny discusses separately two groups of heart cases; first, those in which the dominant rhythm originates at the normal point, and, second, those in which the rhythm originates abnormally, as in cases of "absolute" or "perpetual" arrhythmia. In cases of the first class the beneficial effects of digitalis and its allies were less striking than in those of the second class. The inhibitory effect (slowing) was obtained in only about 30%, sometimes associated with sinus irregularity or partial heart block. The muscular effect in increasing contractility and tone could not be directly measured, but was inferred to be present in cases where clinical improvement occurred without slowing. Extrasystoles and sometimes pulsus alternans were induced. In the second class of cases with auricular fibrillation and absolutely irregular ventricles, improvement under digitalis was much more marked. The pulse was slowed in 90% of the cases with improvement in symptoms, although the heart remained irregular. This slowing was attributed to a partial blocking of the bundle of His, "relieving the ventricle from continual bombardment with impulses from the auricle," an inhibitory effect which was prevented if atropine was given. The desirability of obtaining drugs which have only the inhibitory or only the muscular action is emphasized. Aconite and aconitine for the former and helleborein for the latter have been tried, but are not satisfactory. The best effects of digitalis and strophanthus are obtained only by the largest doses that can be given without causing gastric or intestinal symptoms.

3. Wiggers has carefully reviewed the results of experimental work as to the functions of the pituitary gland and the actions of its extract. The pituitary gland is made up of an anterior and a posterior portion, the two differing in development and in structure. Extirpation experiments seem to have shown that the gland is necessary to life, and that the essential function, probably performed through an internal secretion, resides in the anterior lobe. It has been impossible, however, to obtain extracts from the anterior lobe which exert any physiological action. The posterior lobe, however, yields extracts whose action has been studied by a number of investigators, including the author. The chief effects of these extracts are (1) peripheral constriction of blood vessels with increase in blood pressure; (2) slowing and depression of heart action; (3) increase in urinary secretion; and (4) inhibition of flow of pancreatic juice.

4. Thomas' article disputes the teachings of Codman, that subdeltoid bursitis with adhesion is the common cause of stiff and painful shoulders with loss of power in the arm. Thomas describes evidence which has led him to believe that the true condition is a peri-arthritis from tears of the axillary portion of the shoulder-joint capsule.

9. Walsh, from a study of sixty-seven cases of pulmonary tuberculosis with large lesions, followed over a sufficiently long period to justify positive statements as to their results, concludes that lesions involving the whole of one lobe of the left lung usually give better results than lesions of the same size in the right lung. One reason for this appears to be that the large lesion on the left more frequently represents the secondary development in a somewhat resistant case. Lesions involving an amount of lung tissue the size of the left upper lobe are said to give a better prognosis when the opposite side shows a chronic healed lesion.

[F. W. P.]

JOURNAL OF INFECTIOUS DISEASES.

APRIL 12, 1911.

1. WINSLOW AND PHELPS. *Investigation on the Purification of Boston Sewage.*
2. JACKSON AND MUER. *Liver Broth; A Medium for the Determination of Gas-Forming Bacteria in Water.*
3. *WESTON AND KOLMER. *Guinea-Pig Test of the Virulence of Diphtheria Bacilli.*
4. *TUNNICLIFF. *On Variations in the Phagocytic and Coccidal Power of the Blood in Pneumonia and Scarlet Fever.*
5. TUNNICLIFF. *Further Studies on Fusiform Bacilli and Spirilla.*
6. MAYER. *Transmission of Spotted Fever by Other than Montana and Idaho Ticks.*

7. MAYER. *Transmission of Spotted Fever by the Tick in Nature.*
8. DAVIS AND PETERSEN. *Complement Deviation in Rocky Mountain Spotted Fever.*
9. MOORE. *Time Relationship of the Wood-Tick in the Transmission of Rocky Mountain Spotted Fever.*
10. BARBER. *A Technic for the Inoculation of Bacteria and Other Substances into Living Cells.*
11. BREED AND STIDGER. *The Number of Cellular Elements in Milk.*
12. DICK. *On Institutional Dysentery.*

3. The presence in the throat of apparently healthy individuals of organisms morphologically typical diphtheria bacilli makes the "virulence test" of especial interest and value. The authors recommend the following technic. The organisms presenting the morphology and staining reaction of diphtheria bacilli are planted, isolated and grown in alkaline sugar broth for forty-eight hours at 37.5° C. Guinea-pigs are inoculated subcutaneously with 0.5% of body weight of this unfiltered culture. Should death not result in four to six days the organism is pronounced non-virulent. Should the pig die, the same lethal dose is mixed with 250 units of antitoxin and injected in the same way into another animal. Should this latter die, the diphtheria bacillus is considered not responsible for either of the fatal issues. Should it survive, the organism is pronounced virulent.

4. Tunnicliff finds that in mild cases of pneumonia the phagocytic power of the blood is increased; that in mild cases of scarlet fever it is unchanged; and that in severe cases of either infection it is diminished at the height of the disease. [L. H. S.]

## THE LANCET.

### APRIL 15, 1911.

1. *MACKENZIE, J. *The Oliver Sharpey Lectures on Heart Failure. Lecture III.*
2. ROUTH, A. *The Indications for and Technic of Cæsarean Section and the Alternatives in Women with Contracted Pelvis, who have been Long in Labor and Exposed to Infection.*
3. *KEITH, A. *An Inquiry into the Nature of the Skeletal Changes in Acromegaly.*
4. WILSON, W. J., AND SINTON, J. A. *A House Epidemic of Enteric Fever, Due to a Carrier of an Atypical B. Typhosus, with Observations on the Transmission of Agglutinins through the Placenta and Mammary Gland.*
5. *BROWN, G. *Notes on Three Hundred Cases of General Anesthesia Combined with Narcotics.*
6. O'CONOR, J. *Prolapsus Uteri; Ventrifixation.*
7. KELSON, W. H. *Some Common Forms of Deafness.*
8. HIRSCH, C. T. W. *Motoring Notes.*

1. *Cf. British Medical Journal*, April 8, 1911.

3. In a long article, profusely but very poorly illustrated, Keith describes in a most interesting manner the characteristic bony changes as found in the skull and elsewhere in acromegaly.

5. Brown, after a careful study of 300 cases of general anesthesia, — ether-chloroform-nitrous oxide or the A. C. E. mixture, — combined with a narcotic, — morphine, hyoscine and scopolamine, veronal, chloral and bromide, — concludes that (*a*) before operation the patient is much more tranquil and does not dread the anesthetic; (*b*) he goes under the anesthetic more rapidly and the amount needed is much less; (*c*) salivation and excessive mucus are much diminished, while post-anesthetic vomiting, shock and pain are greatly lessened. [J. B. H.]

## THE PRACTITIONER.

### APRIL, 1911.

1. *EVE, F. *Hodgkin's Disease, from the Surgical Point of View.*
2. *HALL, F. DEH. *Hodgkin's Disease and Intermittent Pyrexia.*
3. *ROLLESTON, H. D. *Some Aspects of Lymphadenoma (Hodgkin's Disease).*
4. *EDGECOMBE, W. *Some Observations on Low Blood Pressures.*
5. PITT, G. N., AND FAGGE, C. H. *A Case of Splenic Abscess, Operation, Recovery, with Remarks.*
6. WILLIAMS, L. *Some Further Aspects of Obesity.*
7. TAYLOR, W. *Septic Infection of the Intracranial Sinuses.*
8. CARMICHAEL-SCOTT, E. *On the Treatment of Progressive Descent of the Uterus.*
9. *JORDAN, A. C. *Radiographic Demonstration of Lane's Ileal Kink.*
10. HARPER, J. *Acute Phlegmon of the Pharynx, with Some Notes on a Recent Case.*
11. EDMOND, W. *The Immediate Treatment of Retention of Urine in the Male.*
12. JACK, W. B. *Three Cases of Peroneal Paralysis.*

1. Eve briefly sums up the so-called surgical treatment of Hodgkin's disease by the statement "Let it alone."

2. Hall gives a careful study of five cases of Hodgkin's disease with special reference to the peculiar intermittent fever often associated with it. He does not agree with Musser's conclusion that the disease is probably a glandular tuberculosis.

3. Rolleston discusses lymphadenoma, or Hodgkin's disease, in a general way as to its etiology, relation to tuberculosis, pathology and symptomatology.

4. Edgecombe has made a study of a number of patients who suffer from no particular disease, but complain of general slackness and want of tone and in whom the blood pressure is abnormally low. Improvement in their symptoms is always accompanied by a rise in pressure. He has taken the pressure at various periods, before and after rising, before and after physical and mental work, food, excitement and worry. He has studied the effects of altitude, alcohol, constipation and aperients, caffeine, tobacco, digitalis, pituitary extract, glycogen and hydrotherapy. Of the drugs, pituitary extract was most potent, with caffeine next.

9. Jordan describes "Lane's ileal kink" as a not uncommon phenomenon in general enteroptosis in which there is a kink in the intestines at this point, owing to the prolapsed condition of the rest of the gut. It rarely occurs alone, but is merely one feature of a general enteroptosis. He describes the demonstration of this by means of x-ray after the patient has had a large dose of bismuth carbonate. [J. B. H.]

## THE INDIAN MEDICAL GAZETTE.

### APRIL, 1911.

1. *PIERPOINT, H. W., AND ACTON, H. W. *Malarial Cachexia and the Value of Arylarsenates in the Treatment.*
2. CHARLES, A. C. *A Fifty-Rupee Operating Theater.*
3. CASTOR, R. H. *Three Cases of Pseudo-Muscular Hypertrophy in One Family.*
4. GILLITT, W. *More Notes on Jail Dysentery.*
5. MAYNARD, F. P. *The Use of Bismuth Paste in the Diagnosis and Treatment of Chronic Suppurations.*
6. TAYLOR, J. *The Examination of the Feces for Ova of Intestinal Parasites.*
7. NIBLOCK, W. J. *Notes on Some Interesting Surgical Cases.*
8. BOYD, J. C. *A Case of Tetanus Treated by Baccelli's Method in Conjunction with Antitetanic Serum.*
9. MATTHEWS, E. A. C. *Solid Carbon Dioxide; Its Preparation and Indications for Use.*
10. SINGH, B. *Infantile Biliary Cirrhosis.*

1. The authors present a valuable study of pernicious malaria. They believe that after ridding the patient of parasites by adequate doses of quinine, the malarial cachexia may be greatly benefited by stimulating the hematopoictic organs with 5-gr. intramuscular injections of soamin every other day, not to exceed twenty doses. [R. M. G.]

## DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 15.

### APRIL 13, 1911.

1. SONNENBURG, GRAWITZ, AND FRANZ, K. *The Diagnostic and Prognostic Significance of Inflammatory Leucocytosis.*
2. *SOWADE, H. *General Syphilitic Disease in Rabbits by Intracardiac Injections of Cultures.*

3. Rasp, C., and Sonntag, E. *The So-called Paralorical Wassermann Reaction.*
4. Waldvogel. *The Chemical Identity of Antibody Formation with Cell Degeneration.*
5. Martini. *The Preparation of Vaccine of the German Plague Commission of 1899 for Extensive Inoculations in Fear of the Approach of an Epidemic of Pneumonic Plague in 1911.*
6. Seyffarth. *Duodenal Ulcer.* (To be continued.)
7. Schattenstein, J. *Study of the Effect of Vasotonin.*
8. *Dornblüth, O. *Withdrawal of Morphine by Means of Opium and Pantopon.*
9. Falta, M. *Salvarsan in Diseases of the Retina and Fundus.*
10. Günther, T. *Tin Poisoning.*
11. Herzenberg, R. *A Cord-Holder for Bassini's Radical Operation.*

2. In horse serum Sowade has succeeded in growing the spirochete of syphilis in a large proportion of the attempts. The growth has been a marked one. With these cultures he has produced general syphilitic lesions in rabbits by intracardiac injections and has recovered the spirochete from the lesions.

8. Dornblüth has used pantopon in cases of chronic morphinism. The dose can be run up quickly to large amounts, for as soon as the patient is taking large amounts the morphine may be stopped. He describes the routine of his treatment. [C. F., Jr.]

### Wiener Klinische Wochenschrift. No. 7.

#### Feb. 16, 1911.

1. Peters. *Dr. Gustav v. Braun.*
2. Weil, E. *Extracellular Leucocytic Action (Aphagozidia).*
3. *Schmid, H. H. *The Treatment of Chronic Suppurations with Bismuth Paste According to Beck.*
4. Reiss, W., and Krzysztalowicz, F. *The Therapeutic Significance of Arsenobenzol ("606").*
5. *Hahn, J. *The Method of Application of Salvarsan.*
6. Janowski, W. *Comparative Interpretation of the Esophagogram with the Electrocardiogram.*

3. Schmid reports the use of Beck's paste in fifteen cases of persistent sinus, of which ten were either cured or greatly benefited. He believes the procedure to be a safe and harmless method of treating chronic fistulæ and abscess cavities, an admirable diagnostic aid for orientation on the size, course and origin of fistulæ and abscesses, and an excellent symptomatic remedy for sequelæ of pain, secretion and eczema. He presents two good illustrative x-rays and a serviceable bibliography. [R. M. G.]

#### No. 8. Feb. 23, 1911.

1. Hamburger, F. *Theodor Escherich.*
2. Schwarz, O. *The Action of Adrenalin on Unicellular Organisms. (Preliminary communication.)*
3. *Necker, F., and Gagstatter, K. *Symptomatology and Treatment of Stones in the Pelvic Portion of the Ureter.*
4. Gaertner G. *The Measurement of the Permeability of the Nose for the Air-Stream.*
5. Kreibich. *The Nature of Nevus Cells.*
6. Ghedini, G. *The Technic of Bone-Marrow Puncture.*
7. Simon, G. *Rejoinder to Mayerhofer's Critical Observations on my Results in Permanganate Titration of the Cerebrospinal Fluid.*

3. The authors present an elaborate clinical, cystoscopic and radiographic study of ureteral calculus, with report of sixteen cases from Zuckerkandl's surgical clinic at the Rothschild Hospital. The article is a valuable review of the subject, with an excellent bibliography. [R. M. G.]

### Zeitschrift für Klinische Medizin. Bd. 72.

#### Heft. 3–4.

1. *Senator, H. *Significance of the Renal Circulation on Arterial Blood Pressure; the Causes of Heart Hypertrophy in Kidney Disease.*
2. *Laache, S. *Acute Encephalitis and Cerebral Thrombosis.*
3. Sahli, H. *Criticism of Sphygmobolometry.*
4. Isaac, S., and Möckel, K. *Experiments on the Influence of Saponin on the Hemopoietic System.*
5. Fofanow, L. *The Digestion and Absorption of Raw Starch of Different Kinds by the Normal and Abnormal Digestive Tract.*
6. Botkin, S., and Simnitzki, S. *Manchurian Fever; Its Clinical Picture and Origin.*
7. *Grau, H. *Syphilitic Aortic Disease.*
8. *Groedel, F. M. *Influence of Normal Breathing on Heart Position and Activity, by the Roentgen Cinematographic Method.*
9. Sonne, C. *Hyperventilation of the Lungs and Its Significance in the Organism.*
10. Obermayer, F., and Popper, H. *Uremia.*
11. Holzknecht, G., and Olbert, D. *Atony of the Esophagus.*

1. Senator, after reviewing other experiments in which it was demonstrated that a mechanical blocking of the renal circulation is not the sole cause of increased arterial blood pressure, contributes a similar experiment with like conclusion. Into one of the branches of the renal artery in a cat 1.5–2.0 ccm. of a solution of warm liquid paraffine was injected very slowly. This procedure as shown by subsequent microscopic examination produced multiple emboli in glomeruli and capillaries. In spite of this increased peripheral resistance in renal circulation, no increase of pressure in the systemic circulation was produced. The author believes that we must look rather outside of the kidney for the cause of increased blood tension in chronic nephritis; that either overacidity of glands giving origin to substances having pressor effect or lack of control of these same glands — adrenal, pituitary, etc. — by supposed "hormones" from the kidney is a likely field of investigation.

2. Laache reports four cases of acute hemorrhagic encephalitis; two were accompanied by venous thrombosis, one was associated with old cysts of softening, the fourth occurred in epilepsy. No microscopic organisms were found in the brains of any. The etiology in all was obscure.

7. Twenty-three cases of aortic disease, supposedly of syphilitic origin, are analyzed. This condition comes on in mid-life, five of his cases being between thirty and forty years of age, occurring anywhere from six to forty-one years after exposure. Symptoms, which should be commonly the first evidence of the condition, are of less duration than in other forms of aortitis; in fact, seven of his syphilitic cases of broken compensation gave a history of circulatory disturbance of only one-half year, and death supervened in some shortly after symptoms had first appeared. Early to be noted are slight cyanosis, mild icterus, hypochondriasis, melancholia and even hallucinosis in the luetic form, not to be found in other varieties.

Albuminuria was not usually present, contrary to findings in arteriosclerotic cases. The Wassermann reaction was positive in twenty-one of the twenty-three cases. It is suggested that syphilographers look inside the body as well as outside for evidence of syphilis and thus more frequently discover aortic syphilis in its early stages, at which time it could be treated with greater success.

The weak part of the paper lies in the diagnosis of the condition, the history of the case and a positive Wassermann reaction frequently deciding in favor of luetic origin. Only five cases came to autopsy, and in none is mention made of the finding of spirochetæ.

8. Groedel concludes that changes in size and shape of the heart are caused solely by respiratory variations. [J. B. A.]

### Revue de Médecine.

#### April, 1911.

1. Devic, E., and Gardère, C. *Scarlatiniform Erythema Recurring in a Case of Tuberculosis.*
2. *Tommasi, L. *Contribution to the Study of Tubercular Rhumatism.*
3. Castriota, L. *Experimental Researches on the Existence and Activity of Antiglycosuric Sera.*
4. *Pascal. *Dementia Præcox.*
5. Braillon. *Diabetic Pleurisies.*

2. Tommassi describes a form of subacute rheumatism under the heading of tuberculous rheumatism. These cases, which are to be distinguished from "surgical tuberculosis," present a polyarthritis, showing slight swelling and pain, which is transient in character. The chief point of differentiation from acute polyarthritis is the lack of the cardinal signs of inflammation. Unfortunately many of the author's cases have remained unproved.

4. The author gives a very detailed account of dementia præcox, as regards its various character, symptomatology, evolution, pathology, etiology, diagnosis, prognosis and treatment. Many of the early cases are escaping diagnosis and, accordingly, the benefits derived from thorough treatment. [L. H. S.]

## Miscellany.

### OPTOMETRY IN OTHER STATES.

From time to time, in issues of the Journal, we have made editorial comment on the repeated introduction before the Massachusetts State Legislature of the so-called "optometry bill." Similar bills have been introduced before the legislatures of other states. It is reported that these bills have been defeated in Alabama, Colorado, Connecticut, Missouri, South Carolina and Texas. In Illinois, New Jersey, Ohio and Pennsylvania they are still pending, but their defeat is expected. In Massachusetts the bill has been reported favorably by a majority of the Committee on Public Health, to which it was referred. This action on the part of the committee is disappointing. It cannot be too urgently hoped that the recommendation of the minority, Drs. Grainger, Gifford and Pattee, may prevail.

In connection with the campaign for optometry in various states, it is instructive to note the history of the measure in Alabama. In this state the bill was passed by the legislature, through misapprehension of its intent, but was vetoed by the governor. In the *Journal of the American Medical Association* for May 6 is printed his veto message, which, for its clear statement of the issues involved, seems to deserve republication:

*To the Senate:* I herewith return Senate Bill No. 151 without my approval.

This bill proposes legally to organize or establish in this state a new occupation or profession, to be known as optometry, based on the science of optics as applied to the eye.

As I understand it, an optometrist is in reality an optician, and an optician has always been considered a tradesman, and he is not required or expected to have a scientific medical knowledge required by law of the oculist, whose profession authorizes him to treat the eye medically.

Inasmuch as the field of the optometrist constitutes a part of the broad field of the science of medicine, a part already occupied by regularly educated and licensed physicians, known as oculists, it becomes a question worthy of investigation and study as to the wisdom of permitting territory belonging legitimately to one profession to be invaded by persons who are not, and do not claim to be, equipped for membership in that profession. As all know, the eye is a very delicate and important organ of the body. Consequently, to deal with it intelligently there is required a thorough knowledge of not only its optics, but its anatomy, physiology and diseases. While optometrists proposed to deal only with the optics of the eye, to draw the line that separates the optics of the organ from its diseases must require a thorough knowledge of everything that appertains to the eye; that is, of its optics, anatomy, physiology and its diseases.

A man who is familiar with only one part of the subject would necessarily often be unable to determine where his domain begins. Just as a physician who understands only the anatomy, physiology and diseases of the eye would not be in a position to deal with its optics, so a person who only understands its optics would not know where its diseases begin. That is, the entire subject seems to be so closely correlated as to render it practically impossible to draw a line of demarcation between its parts and assign one part to persons who do not claim to study or understand the whole. If this be true, it becomes a serious question as to the good policy of authorizing persons by law to occupy a field, the limits of which they cannot define. A class of men, known as opticians, has long existed. The duties of these consist in grinding glasses and filling the prescriptions of oculists. This relation corresponds with that sustained by druggists and physicians, and it would seem to be the wisest policy to insist that these relations be maintained. To permit an optician to usurp the rights of an oculist, who is at the same time an educated physician, would be quite as irregular as to permit a druggist to usurp the rights of a physician in the treatment of diseases of patients.

I am informed that bills similar to this have been introduced in many legislatures, inspired, perhaps, by some large manufacturing establishments for the manufacture and sale of glasses. It is easy to see that conferring a high-sounding title on men engaged in a trade would tend to exaggerate their importance and skill in the minds of the public.

In vetoing this bill I am not d priving opticians or persons dealing in glasses of any rights that legitimately belong to them.

If such a law is enacted, it would, in my opinion, be an infringement on the already existing laws regulating the practice of medicine in this state. I therefore recommend that any applicant for the practice of optometry be required to undergo the same examination as that of any specialist who proposes to practice medicine in his selected specialty.

I am informed by physicians of the highest authority and by men who by lifelong study have thoroughly acquainted themselves with the eye and its diseases, that the legislation sought in this bill is extreme, and I am also informed by the State Board of Health that only a thoroughly equipped and licensed physician should be permitted to enjoy the privileges intended to be conferred on optometrists by this bill.

It will be noticed that it is intended by this bill that the opticians of the state shall have exclusive control of the officers provided for in the bill, and I am informed that if there is a department created by legislation akin to that sought by this bill it should be placed under the control of the State Board of Health, or of regularly licensed and educated physicians.

A bill similar to this was presented in 1907 to Governor Hughes, of New York, and was vetoed by him on this very ground.

The eye is too delicate and valuable an organ to be made the subject of any experiment whatsoever; and if there is to be such a science as that of optometry, I fear that it is yet too near to its inception to be given the power contemplated in this bill, which is returned to you without my approval.

Emmet O'Neal, *Governor.*

## Correspondence.

### TINCTURE OF IODINE AS AN ANTISEPTIC.

Fort D. A. Russell, Wyo., May 9, 1911.

*Mr. Editor:* The very delightful letter of your Paris correspondent "S.," in your issue of the 21st inst., on the antiseptic properties of iodine, hints at a more extended use of the tincture in the future.

In the vast amount of literature which has already accumulated in the last eighteen months on iodine there seems to be an unending repetition of its use as an antiseptic on the skin and surface wounds. Let me once and

for all grant this fact, which is as well established as that sugar dissolves in hot tea, and pass on with "S." to its more important uses.

The possibilities which your correspondent foresees and the cases he reports are marvelous. They have been seen and are accomplished facts on this side of the Atlantic. The treatment of tonsillitis with tincture of iodine has become routine with me and it is one which I employ in all acute inflammatory conditions of the throat and nose, even diphtheria.

A Bier's bandage is applied about the neck with sufficient compression to cause general capillary suffusion of the face. The tonsils and pharynx are painted with tincture of iodine twice daily and one teaspoonful of the tincture in one quart of normal salt solution is used frequently as a nasal spray and gargle. When I can see cases within the first twenty-four hours after the initial symptoms I expect a cure in three days. They never go on to suppuration. Chronic enlarged tonsils shrink somewhat under this treatment. Experience shows that it is not necessary to mop the throat dry before applying the tincture.

In making the iodine salt solution it is necessary to use common salt, as the commercial saline tablets contain chemicals which neutralize the iodine.

The treatment of gangrene from frost bite has made a wonderful advance with the use of this solution, which depends in part for its therapeutic power on its osmotic property. Enveloped in a saturated wet dressing of iodine salt solution, we observe first no odor of gangrene; second, the process becomes stationary at once and, third, feeble tissue is enabled to regain vitality, thus saving more tissue. I have been delightfully surprised in two cases of frost bite of the toes, where experience had led me to expect complete loss of the toes, to behold the apparently gangrenous tissue become horn-like and finally come off like a glove finger, leaving pink toes with new nails.

The treatment of fistula in ano has always been tedious; the pathological condition, the septic location, tend to make the condition most rebellious. I have been delighted to see a case of the internal, incomplete variety, after the usual incision and curettement, proceed to healthy granulation and complete recovery in six weeks under daily mopping with tincture of iodine. The pain of the application was slight and lasted but a few moments for the first few applications. The patient was able to resume his usual duties at the end of two weeks.

As an eyewash for conjunctival and blepharal infections, as an irrigation in otitis media after perforation, or for acute or chronic cystitis, as an injection in tubercular bone fistulas, as an application to burns or bullet wounds, the iodine salt solution is ideal and does the work. Goelet and Dannreuther report wonderful results with a similar solution in female gonorrhea.

Tincture of iodine is the long-desired safe antiseptic for abdominal surgery. This epoch-making discovery the writer first had the honor of demonstrating and reporting. The technic in general is as follows: The patient may or may not be prepared by previous dieting, rest in bed and stimulants. The treatment of emergency cases has shown the writer that these preliminaries are not so important as he once thought they were.

The instruments are boiled if possible. If there be no time, they are wiped off with tincture of iodine. The ligatures are dropped into the tincture at the time that the anesthetic is commenced. The site of the incision and the surgeon's hands are mopped with the tincture of iodine. Pure tincture of iodine may be used with safety on the peritoneal surface of any abdominal organ and is most efficacious in inflammatory conditions, such as pus tube or appendicitis, since it is safe in bactericidal strength and does not cause adhesions.

The writer advocated in the *New York Medical Journal* of Feb. 11, a new technic in the treatment of suppurating appendicitis which tincture of iodine alone could have made possible, as no other antiseptic is tolerable on the peritoneum in bactericidal strength.

Although the therapeutic test of the antiseptic power of iodine has been sufficiently convincing in the light of clinical results, we need no longer confine ourselves to empiric grounds to prove it. The published report of Drs. Seelig and Gould in the *Journal of Surgery, Gynecology and Obstetrics* for March, 1911, on "Osmosis in the Action of Antiseptics," proves conclusively that iodine and alcohol combined have a most powerful osmotic property far beyond that of any other antiseptic either alone or in watery or alcoholic solution; hence the singular efficacy of the tincture of iodine to penetrate the deeper tissues and exert its antiseptic virtues. Experiments with living and dead membranes show that this combination penetrates in a few minutes where some do not for two hours, thus proving conclusively that the use of any of these antiseptics except iodine and alcohol for immediate sterilization of hands or skin is as futile as attempting to cook a roast of beef in five minutes. Yet with all these assurances and reports there will be some even after we are dead who will believe that permanganate of potassium and oxalic acid followed by a dip in 1–1000 bichloride will instantly sterilize the skin of the hands and will prefer iodoform because it is *said* to liberate iodine in the body fluids — and besides, they have always used it. I am,

Very truly yours,

FRANK THOMAS WOODBURY, M.D.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MAY 6, 1911.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | — | — | Waltham | 7 | 0 |
| Chicago | 682 | 177 | Brookline | 7 | — |
| Philadelphia | 576 | 145 | Chicopee | 10 | 4 |
| St. Louis | — | — | Gloucester | 10 | 2 |
| Baltimore | — | — | Medford | 3 | 1 |
| Cleveland | — | — | North Adams | 10 | 2 |
| Buffalo | — | — | Northampton | 7 | 1 |
| Pittsburg | — | — | Beverly | 1 | — |
| Cincinnati | — | — | Revere | 2 | — |
| Milwaukee | — | — | Leominster | 3 | 1 |
| Washington | — | — | Attleboro | 8 | 2 |
| Providence | — | — | Westfield | 2 | — |
| Boston | 260 | 67 | Peabody | — | — |
| Worcester | 44 | 11 | Melrose | 2 | 0 |
| Fall River | 55 | 25 | Hyde Park | 4 | 4 |
| Lowell | 34 | 9 | Woburn | 4 | 2 |
| Cambridge | 37 | 8 | Newburyport | 5 | — |
| New Bedford | 32 | 16 | Gardner | 3 | 1 |
| Lynn | 24 | 2 | Marlboro | 7 | 0 |
| Springfield | 38 | 11 | Clinton | 4 | 1 |
| Lawrence | 35 | 9 | Milford | — | — |
| Somerville | 15 | 4 | Adams | — | — |
| Holyoke | 27 | 13 | Framingham | 3 | 1 |
| Brockton | 14 | 1 | Weymouth | — | — |
| Malden | 11 | 1 | Watertown | 2 | 0 |
| Haverhill | 15 | 3 | Southbridge | 1 | — |
| Salem | 10 | 4 | Plymouth | — | — |
| Newton | 6 | 2 | Webster | 6 | 1 |
| Fitchburg | 6 | 2 | Methuen | — | — |
| Taunton | 15 | 1 | Wakefield | — | — |
| Everett | 7 | 2 | Arlington | 3 | 2 |
| Quincy | — | — | Greenfield | 4 | 1 |
| Chelsea | 16 | 3 | Winthrop | 4 | — |
| Pittsfield | 3 | — | | | |

## SOCIETY NOTICE.

AMERICAN SURGICAL ASSOCIATION. — The American Surgical Association will hold its thirty-second annual meeting at Denver, Colo., June 19, 20 and 21.

CHARLES A. POWERS, M.D.,
*Secretary.*

## RECENT DEATHS.

GAY, WILLIAM FREDERICK, M.D., M.M.S.S., died at Boston, May 12, 1911, aged forty-two years.

DR. SAMUEL E. HOLTZMAN, of New York, died suddenly from cardiac disease on May 8, at his summer residence at Ocean Grove, N. J., at the age of seventy-three years. He was born in Winchester, Va., and early in life removed to Indiana. At the time the Civil War broke out he was a hospital interne in New York City, and he served throughout the war as a surgeon in the army. Some twelve years ago he became incapacitated in consequence of a fracture at the hip-joint, and since then his winter home has been with a married son at Hastings-on-the-Hudson.

## Original Articles.

# THE OCCURRENCE OF INFANTILE PARALYSIS IN MASSACHUSETTS IN 1910.

## Reported for the Massachusetts State Board of Health.

BY ROBERT W. LOVETT, M.D., BOSTON,
AND
PHILIP A. E. SHEPPARD, M.D., BOSTON.

The last year has been one of considerable progress in our knowledge of infantile paralysis. The disease has been widespread in the United States, and twenty-three states have made the disease reportable, and several state boards of health have taken up the work of investigation. The clinical study of cases has become more accurate and careful, and the importance and frequency of abortive cases has been much more fully recognized.

Three certain interesting contributions to our knowledge are as follows:

Osgood and Lucas found an active virus in the naso-pharyngeal membrane of one monkey, who had recovered from the acute attack five and one-half months afterward and in another six weeks afterward. This virus was sufficiently active to cause paralysis in a first and second generation of monkeys into which it was injected.[1]

The second contribution is from Flexner and Clark.[2] It has been previously shown that if hexamethylenamin is administered by mouth, its presence can be detected in the cerebrospinal fluid. Flexner and Clark showed that if the drug be given by mouth and its use continued after its presence in the spinal fluid can be detected in monkeys, and if such animals are subsequently inoculated either subdurally or by the intracerebral route, the paralysis is in a certain proportion of cases delayed or prevented. But successful results by the drug have so far been obtained in inhibiting infection and not in restraining an already established infection. In other words, there is as yet an absence of experimental evidence to show that the drug is of much use when the disease has begun.

A third contribution by Anderson and Frost[3] is as follows: It is only very recently that it has been found possible by a laboratory method to throw back light on whether a suspicious case occurring in the past may or may not have been abortive infantile paralysis. It is possible by means of neutralization tests to determine this matter by mixing the blood serum of the recovered case with the filtered virus, and injecting the mixture into a monkey, the serum of recovered cases having the power of neutralizing a certain amount of the virus.

By a study of the changes in the cerebrospinal fluid in monkeys preceding the paralysis, a forecast of the probable changes in man was worked out and paralysis predicted in a human case where a lumbar puncture was done early. The case is reported by Frissell.[4] The changes are the following: At the height of the lesions in the meninges it has been found in monkeys and confirmed in a human case that the cerebrospinal fluid is slightly turbid or opalescent and contains an excess of protein. There is a large increase of white cells both poly- and mono-nuclear. The fluid may in some cases be distinctly turbid, and polynuclear cells may predominate. Paralysis occurs at the height of these changes and then the changes described in the fluid begin to disappear.

In the matter of etiology more attention has been paid to dust, and the data reported by Hill[5] are suggestive. In Winona, Minn., there were 29 cases up to the end of July, 27 occurring on dusty streets. On Aug. 5, street watering was begun at the suggestion of the state and local health officials, and no case occurred in Winona after Aug. 12, although the greatest incidence throughout the state had yet to develop and the neighborhood outside of Winona continued to show cases. Hill quotes also three other instances in the state of a similar occurrence.

The need of quarantine is being appreciated, and the experience in Nebraska is worth quoting:[6] "We were informed that no legal provision had been made for quarantining such cases, and isolation was recommended, but, of course, could not be enforced nor could the impending Fourth of July celebration be abandoned. This celebration was well attended and shortly after cases were reported from communities previously free from the disease and having had representatives present at the celebration. From May 30 to July 4 we had in the Stromsberg territory 30 cases, while from July 4 to Aug. 3, just thirty days, we had one hundred and fifteen cases." A quarantine was declared necessary and put into effect on July 22, and after Aug. 3, there were only 15 cases in the Stromsberg territory.

The salient points in progress may be summarized as follows:

(1) A decidedly keener attitude on the part of the profession, the health boards, and legislative bodies toward the disease.

(2) The knowledge that the infection may persist in the nasopharynx in monkeys for long periods.

(3) The possibility of diagnosticating after recovery the character of abortive cases.

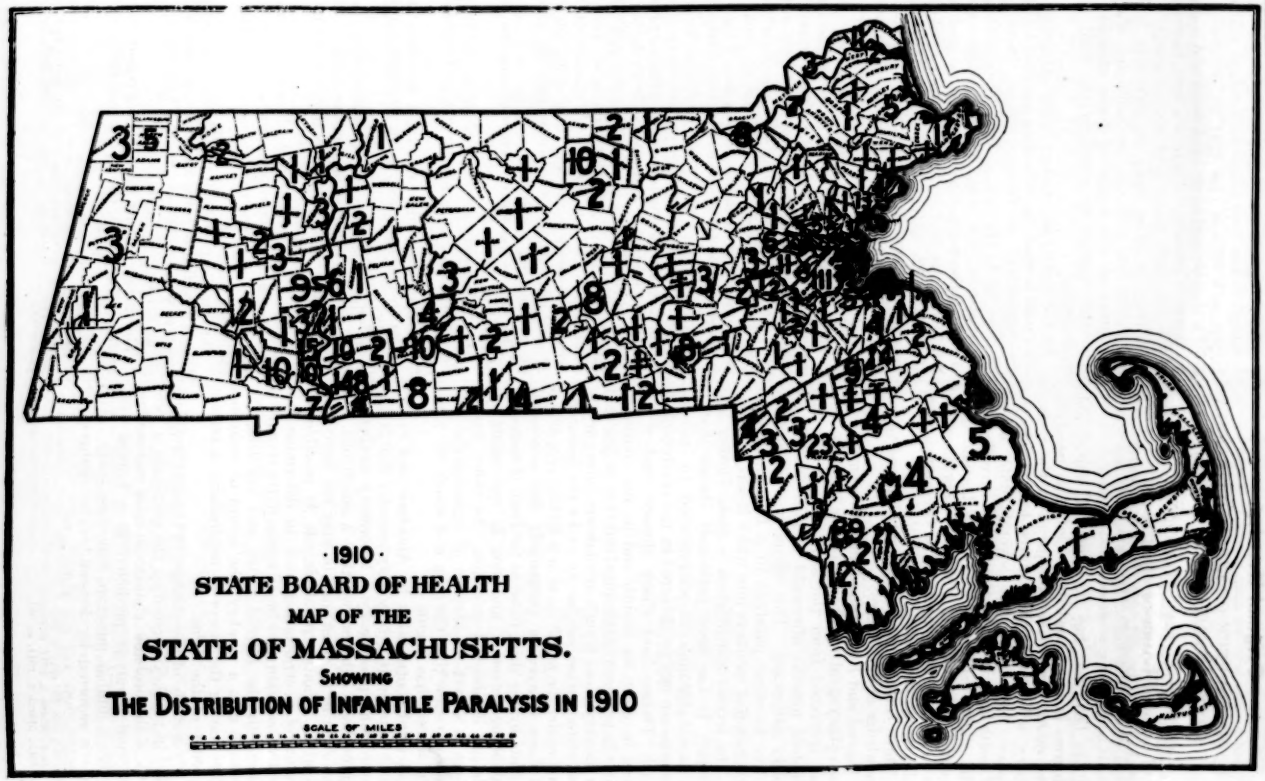
(4) The possibility of early diagnosis by means of lumbar puncture.

(5) The possibility that hexamethylenamin may be in monkeys at times a preventive of infection, but does not apparently control established infection.

During the year 1910 the Massachusetts State Board of Health continued for the fourth consecutive year the investigation of infantile paralysis as it occurred in the state.[7]

The disease having been made a reportable one in November, 1909, the board received notice of

[1] Jour. Am. Med. Asso., Feb. 18, 1911, p. 495.
[2] *Ibid.*, Feb. 25, 1911, p. 585.
[3] *Ibid.*, March 4, 1911, p. 663.
[4] *Ibid.*, March 4, 1911, p. 661.
[5] Trans. Prev. Med. of Am. Med. Asso., 1910.
[6] Anderson: Pediatrics, August, 1910.
[7] Boston Med. and Surg. Jour., 1908, clix, p. 131. *Ibid.*, 1909, July 22. *Ibid.*, 1910, clxiii, p. 37. Am. Jour. Pub. Hyg., November, 1910, p. 875.


·1910·
STATE BOARD OF HEALTH
MAP OF THE
STATE OF MASSACHUSETTS.
SHOWING
THE DISTRIBUTION OF INFANTILE PARALYSIS IN 1910
SCALE OF MILES

cases reported by physicians, and to them blanks were sent to be filled out and returned. Dr. Philip A. E. Sheppard and Dr. T. P. Hennelly were employed by the board to investigate the cases at their homes, to make an intensive study of epidemic centers and to see as many other cases reported as practicable. The scope and direction of the inquiry have again been supervised by an advisory committee consisting of Dr. Theobald Smith, Dr. Milton J. Rosenau, Dr. James H. Wright and Dr. John Lovett Morse, who have met at frequent intervals the secretary of the board and the members concerned in the inquiry. The legislature of 1910 generously appropriated the sum of $5,000 for the purposes of this investigation.

The data relating to the disease in the state during the year 1910 will be here presented, and later in another form will be presented those conclusions that seem warranted by a study of the disease in Massachusetts for four years, with certain general considerations with regard to the disease. The investigation will be continued in 1911 on a more extended scale, $10,000 having been appropriated for the purpose by this year's legislature.

There are three classes of cases to be reported on:

(1) The total cases reported by physicians with their location, — 845.

(2) The number of cases for which blanks were filled out, — 601.

(3) A group of cases carefully studied by the medical investigators of the board, — 200.

The groups of cases considered in various respects will, therefore, differ in number, more space in general being allotted to the 200 carefully studied than to the others.

The record of the last four years is as follows:

| | Cases. | Cities and towns with cases. |
|---|---|---|
| 1907, | 234 | 75 |
| 1908, | 136 | 47 |
| 1909, | 923 | 136 |
| 1910, | 845 | 153 |

The distribution of the cases is seen in the map, from which it will be seen that marked epidemic centers existed in Springfield and Fall River, with a suggestion of a minor epidemic center in Boston. The number of cities and towns affected was larger in 1910 than in 1909, when there were a greater total number of cases.

Deficiency Rainfall, 1904–1910, Inclusive.

| Year. | Cases in state. | Actual. | Normal. | Deficiency. |
|---|---|---|---|---|
| 1904 | | 43.81 | 45.16 | −1.35 |
| 1905 | | 37.60 | | −7.56 |
| 1906 | | 43.21 | | −1.95 |
| 1907 | 234 | 44.49 | | −0.67 |
| 1908 | 136 | 37.61 | | −7.55 |
| 1909 | 923 | 42.10 | | −3.06 |
| 1910 | 845 | 35.50 | | −9.42 |
| | | | | −31.56 |

A consideration of this table shows that for the last four years the driest years have not been attended by the largest number of cases in Massachusetts.

The comparison of the rainfall by months and the incidence of the disease shows that in 1910 August was the driest of the three summer months and also the one in which the largest number of cases occurred. August was also the month with the highest mean temperature, so that both drought and heat were at their height when the largest number of cases occurred.

Analysis of Cases Thoroughly Studied.

(200 cases in 186 families.)

| | | |
|---|---|---|
| Total number of children, | | 488 |
| Number of contemporaneous illnesses in children and adults, | | 253 |
| Number of children paralyzed, | 172 | |
| Number of adults paralyzed, | 28 | |
| | — | 200 |
| Possible abortive cases, | | 53 |

An investigation of the nearness of the affected house to railroad and highroad showed no preponderating number close to either, 15% being close to a railroad and about 60% on the highroad. The nearness to water in the 200 cases studied in and around Springfield showed 17% within one-eighth mile of the river, 35% within one-fourth mile and the rest at greater distances. Of the remaining cases in other localities, in the great majority of cases where it was stated, the house was not near the water.

### SURROUNDINGS OF PATIENTS.

*Age of house.* — The affected house was a new house, that is, less than ten years old, in 27% of the cases, and over ten years old in the remainder, and an investigation of the *sanitary condition* of the house showed, as in former years, that in most cases such conditions ranged from fair to excellent. In 74% of the cases the location was given as "dry," and as "damp" in the remainder.

An investigation of the *water supply* and *sewage disposal* showed in the great majority of cases city and metropolitan water supply and sewage disposal, so that no common factor is to be found in either of these elements which might be assigned as a possible cause.

*Dust.* — The amount of dust in affected localities was most carefully inquired into, but there is no standard of measurement and the information in the following table must be regarded as only approximately accurate:

| | Cases. |
|---|---|
| No dust, | 156 |
| Very little dust, | 124 |
| Much dust, | 123 |
| Moderate amount of dust, | 172 |
| Excessive amount of dust, | 7 |
| Not stated, | 77 |

In this connection the treatment of streets on which cases occurred was investigated. The results were as follows:

| | Cases. |
|---|---|
| No treatment, | 316 |
| Watered, | 162 |
| Oiled, | 32 |
| Watered and oiled, | 16 |
| Not stated, | 75 |
| | 601 |

*Digging* or *excavating* in the neighborhood of affected houses had been in progress in a little over 15% of 334 cases where data existed on this point.

PRESENCE OF INSECTS, VERMIN, RODENTS, ETC.

Among 185 families, 185 had insects, etc., as follows:

| | | | |
|---|---|---|---|
| Flies were present | in | 185 | families |
| Mosquitoes were present | " | 67 | " |
| Ants | " | 62 | " |
| Mice (house) | " | 60 | " |
| Bedbugs | " | 39 | " |
| Roaches | " | 29 | " |
| Spiders | " | 26 | " |
| Rats | " | 23 | " |
| Biting flies | " | 7 | " |
| Field mice | " | 4 | " |
| Fleas | " | 2 | " |
| Bees | " | 2 | " |
| Sand fleas | " | 1 | family |
| Snakes | " | 1 | " |
| Crickets | " | 1 | " |
| Squirrels | " | 1 | " |
| Leeches | " | 1 | " |

As to *insect bites*, there was no such history in 70% of 200 cases carefully investigated; a history of mosquito bites in 27% and in the remainder bites from various insects were recorded.

Any investigation as to the prevalence of an especial insect in a given locality, which is to be of much value, must be made on the spot by a person skilled in entomology, and definite conclusions cannot be based on the above table.

DATA AS TO ILLNESS IN DOMESTIC ANIMALS AND BIRDS.

Of 186 families:

| | |
|---|---|
| No animal of any kind in | 76 |
| Animals present in | 110 |
| | 186 |

Thus:

(*a*) 27 homes had 31 dogs without sickness.
50 " " 66 cats " "
39 " " about 745 hens and chickens without sickness.
11 " " 18 horses without sickness.
3 " " 3 cows " "
4 " " 4 canaries " "
10 " " 2 goldfish " "
1 home " 5 geese " "
1 " " 10 ducks " "
1 " " 10 pigeons " "

(*b*) 6 homes " 14 hens with sickness.
6 " " 6 " " "

(*c*) 4 " " 4 dogs with paralysis.
4 " " 12 hens " "

(*d*) 2 " " deaths in 2 dogs.
6 " " " " 6 cats.
8 " " " " 42 hens.
2 " " " " 2 horses.

Total, 34 homes out of 110 had illness, paralysis or death in 82 animals near the time of the human paralysis.

As to paralysis in domestic animals, a veterinary surgeon, Dr. A. W. May, was employed by the board in the autumn of 1910 to visit kennels, poultry farms, veterinary hospitals, etc., through as much of the state as possible, in order to see if the distribution of animal paralysis corresponded to that of the human disease. His report will be published separately.

Other data not given in former reports follow:

NATIVITY.

| | Cases. |
|---|---|
| American, | 315 |
| French Canadian, | 33 |
| French, | 51 |
| French American, | 5 |
| Irish American, | 65 |
| Polish, | 19 |
| Portuguese, | 13 |
| Hebrew, | 15 |
| Italian, | 11 |
| English, | 9 |
| English American, | 2 |
| Irish, | 4 |
| French-Irish, | 2 |
| Colored, | 6 |
| Swedish, | 15 |
| German American, | 6 |
| Greek, | 5 |
| Finlander, | 2 |
| Nova Scotian, | 2 |
| Scotch, | 4 |
| Austrian, | 1 |
| Bohemian, | 1 |
| Not stated, | 15 |
| | 601 |

This table is important as showing that the apparent partial immunity of the colored race may be less true than had been supposed, the relative incidence in Massachusetts in 1910 per thousand of population being in the colored race .17 and in the white .20. In order to obtain the incidence among the colored race in a community thoroughly infected, this was calculated for Springfield where, in a colored population of 1,294, there occurred 4 cases, an incidence of 3.09 per thousand, while in the white population of the same city the incidence was 1.99 per thousand.

COMMUNICABILITY.

The question of communicability is probably obscured by the existence of abortive cases. The data here presented were established with all possible care. In 200 cases there was certain direct contact with an acute case in 32 cases, indirect contact in 10, and direct contact with a possible abortive case in 4. Out of 186 families, 13 had 2 cases and 1 family had 3.

There were no lodgers in 176 families of 186 investigated in this regard, and 18 lodgers in the 10 other families.

CONDITIONS PRECEDING THE ATTACK.

*Swimming and wading.* — Out of 524 cases when the question was answered, it was stated that 15.8% of the patients were swimming, wading or paddling in water just before the attack, while the remainder were not.

In 1909, out of 150 cases, 40.8% gave such a history on account of the different locality in-

vestigated last year, which may serve as a reminder that in estimating the possible effect of etiological factors too much importance cannot be attached to investigations confined to one locality.

*Exposure to heat, cold or dampness* just preceding the attack occurred in the history of 27% of 575 cases and was absent in the rest.

An *accident, fall* or *over-exertion* was noted in 23% of 573 cases just before the attack.

### DIET.

The majority of the patients ate of several kinds of food. In the analysis of a series of 200 cases studied in and around Springfield, four babies, all under six months, were said to be fed on breast milk alone. The other data as to diet were not apparently of especial interest, many articles of food being given, from a study of which no conclusive data can be drawn.

### By Age Periods.

| | Cases. | Per cent. Approximate. |
|---|---|---|
| From birth to twelve months inclusive, | 51 | 8.5 |
| From thirteen months to twenty-three months inclusive | 65 | |
| Two years old, | 61 | |
| Three years old, | 98 | |
| Four years old, | 69 | |
| Five years old, | 51 | 65.5 |
| | 395 | |
| Six to ten years inclusive, | 93 | 80.8 |
| | 488 | |
| Eleven to twenty years inclusive, | 69 | 92.1 |
| | 557 | |
| Twenty-one to thirty years inclusive, | 28 | |
| Thirty-one to eighty years inclusive, | 15 | |
| | 600 | |

It is evident by a comparison with the table for 1909 that in 1910 a larger number of older children were attacked, the percentage of all cases from one to ten inclusive being 87.48 in 1909, while in 1910 only 80.8% of the same age were attacked.

### Mortality by Age.

| | Cases. | Deaths. | Mortality. (Per cent.) |
|---|---|---|---|
| Under one year, | 38 | 3 | 7.89 |
| One to ten years, | 451 | 39 | 8.64 |
| Over ten years, | 112 | 12 | 10.71 |
| Total, | 601 | 54 | |
| Average mortality, | | | 8.98 |

The total mortality was 1% higher than in 1909.

### INCIDENCE OF THE DISEASE.

*Sex.* — There were 331 males and 270 females affected.

*The condition of the patient preceding the attack* was given in 540 cases; in about 30% the patient had been perfectly well and in about 60% some abnormal condition existed either some time before or just previous to the attack. Malaise existed in about 20%, affection of the throat or respiratory passages in 9%, gastric or intestinal disturbance in 11% and in the remainder a variety of illnesses, the only group of significance being 10 cases where operation, wounds or sores preceded the attack. A study of the *recent illnesses in members of the same family* showed nothing of apparent importance, a moderate number of ordinary illnesses as being recorded, chiefly of the upper respiratory passages and digestive tract.

### General Features of Acute Attack for 601 Cases.

| | |
|---|---|
| 540 | cases give history of fever. |
| 487 | " " " " pain and tenderness. |
| 284 | " " " " brain symptoms. |
| 209 | " " " " retraction. |
| 95 | " " " " sore throat. |
| 2 | " " " " nystagmus. |
| 1 | case gives " " hiccough. |

*Digestive disturbance* during the attack occurred in about 75% of the cases, this disturbance being nausea and vomiting, constipation or diarrhea, with colic in a few cases.

*Disturbance of the bladder* did not occur in 73% of the cases, but retention was noted in 20% of the cases and other minor disturbances in the remainder.

### Pain and Tenderness.

| | Cases. |
|---|---|
| Pain and tenderness was present in | 469 |
| " " " " absent in | 42 |
| " " " " not stated in | 90 |
| | 601 |

### Pain or Tenderness Lasted.

| | Cases. |
|---|---|
| No pain, | 42 |
| One day or less, | 9 |
| Two days, | 14 |
| Three days, | 20 |
| Four days, | 15 |
| Five days, | 10 |
| Six days, | 6 |
| One week, | 35 |
| One to two weeks, | 41 |
| Two to three weeks, | 32 |
| Three to four weeks, | 18 |
| Four to five weeks, | 8 |
| Five to six weeks, | 4 |
| Eight to nine weeks, | 5 |
| Nine to ten weeks, | 1 |
| A few days, | 25 |
| Until death, | 45 |
| Present when report made, | 181 |
| Not stated, | 90 |
| | 601 |

### Appearance of Paralysis in Days and Weeks after Onset of Fever.

| | Cases. |
|---|---|
| Same day, | 20 |
| One day, | 31 |
| Two days, | 40 |
| Three days, | 34 |
| Four days, | 15 |
| Five days, | 11 |
| Six days, | 11 |
| Seven days, | 14 |
| Eight days, | 4 |
| Nine days, | 2 |
| Ten days, | 2 |
| Eleven days, | 2 |
| Twelve days, | 4 |
| Thirteen days, | 1 |
| Fourteen days, | 1 |

| | Cases. |
|---|---|
| Two to three weeks, | 5 |
| Three to four weeks, | 1 |
| Four to five weeks, | 1 |
| Eight weeks, | 1 |
| | 200 |

DISTRIBUTION OF EARLY PARALYSIS.

| | Cases. |
|---|---|
| One leg only, | 145 |
| Both legs only, | 146 |
| One arm only, | 44 |
| Both arms only, | 12 |
| One arm and leg, same side, | 50 |
| One arm and leg, opposite sides, | 18 |
| Both legs and one arm, | 32 |
| Both arms and one leg, | 8 |
| Both arms and both legs, | 51 |
| Ataxia (transitory), | 7 |
| Back, | 79 |
| Abdomen, | 38 |
| Neck, | 13 |
| Respiration, | 39 |
| Deglutition, | 12 |
| Intercostal, | 1 |
| Face, | 7 |
| Right face, | 31 |
| Left face, | 24 |
| Strabismus, | 2 |
| Not stated, | 32 |

Nine cases out of 200 gave a history of some *skin eruption* appearing on the chest or around the neck, or about the girdle.

In one or two such cases there was noted by the investigator a small maculo-papular rash — a faint blush underlying the area with no definite redness to base of vesicle.

PROGNOSIS.

Up to the time of assembling the board's report (a period of six months after the beginning of the epidemic outbreak in western Massachusetts) 27 cases (13.5%) out of 200 had completely recovered.

A study of the age, distribution of the early paralysis and duration of tenderness and paralysis in these cases leads to the conclusion that the early symptoms offered no means of distinguishing them from cases where the paralysis was to be permanent.

CONCLUSIONS.

The disease in Massachusetts was nearly as prevalent in 1910 as in the previous year, and affected 153 cities and towns instead of 136 as in 1909. But one must remember that a much larger proportion of cases are now recognized and reported in Massachusetts than was formerly the case, so that probably the apparently relative prevalence of the disease in Massachusetts when compared to other states, the total number of cases in the state and the apparent spread are in some measure due to the alert attitude of the medical profession of this state in recognizing and reporting cases.

A large epidemic center existed in Springfield, with 148 cases in the city and a large number in the surrounding towns, the distribution appearing to be radial from Springfield. Another epidemic center existed in Fall River, with 89 cases in the city and more or less radial distribution to contiguous towns.

It is evident that the disease has existed in all classes in the community, and not only among the lower classes, from the report on the sanitary conditions under which the patient lived, and also that it exists under all conditions of sewage disposal and with all kinds of water supply. Our researches in the last two years have failed to show an excessive amount of dust in affected localities.

The proportion of affected houses in which contemporaneous sickness, paralysis or death existed in domestic animals or birds still seems larger than one would naturally expect.

The occurrence of 6 cases in the colored race is of importance in connection with the data of other investigators, who have found the race rarely affected.

The facts given with regard to communicability are to be regarded as important, 42 such histories having been obtained in 200 cases.

No definite information as to any one factor is to be found in the antecedents of the attack, since bathing, falls, exposure to heat, overexertion, etc., are common occurrences in children of the affected age in the summer season; nor in the study of diet does there seem much of importance except for the existence of the disease in 4 nursing babies.

The fact has been commented on that the disease was a little more prevalent this year in older children than in 1910.

The study of the immediate antecedents of the attack and the early symptoms show nothing of especial present interest except the very common occurrence of pain and tenderness, and the information as to its duration is of value.

The distribution of paralysis was made by a skilled investigator in a group of cases carefully studied, and it is important to note under those conditions the comparatively frequent involvement of the back, abdomen, neck and face — a matter often overlooked.

The per cent of total recoveries from the paralysis within a period of six months and less after the attack was 13.5% in 200 cases as against a a per cent of 16.7% in a similar class of cases in 1909.

For the year 1911 the State Board of Health intends to pursue the same investigation as in the four previous years on a more extended scale, hoping by a study of the disease in one locality over a term of years to reach some conclusions as to its characteristics.

As in former years the board is under great obligations to the medical profession for their ready co-operation at all points and asks for the coming year the same ready assistance.

## ANTERIOR POLIOMYELITIS.*

### Attempts to Transmit the Disease to Monkeys by Inoculation with the Nasal, Pharyngeal and Buccal Secretions of Eighteen Human Cases.

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We lack definite information concerning the mode of transmission of epidemic poliomyelitis. Such information is of fundamental importance from the practical standpoint of preventing the spread of the disease. Flexner and Lewis have shown that the virus may be obtained in the nasal and pharyngeal mucosa of monkeys, and it has been assumed that the virus leaves the body in the secretions of the mouth and the nose; the mode of entrance is perhaps through the nasal and pharyngeal mucosa. This view is strengthened by the known facts in a somewhat analogous infection — epidemic cerebrospinal meningitis.

We have undertaken this work to determine whether the virus of epidemic poliomyelitis may be demonstrated in the nasal, pharyngeal and buccal secretions of patients in various stages of the disease; in convalescents; or in suspected carriers.

The methods employed were as follows:

#### COLLECTION OF MATERIAL.

The specimens were all personally obtained by one of us (P. A. E. S.). The patient was taken just as he was found without being cleaned up at all, but the usual antiseptic precautions were employed by the operator and all instruments and appliances were sterilized.

Each specimen was collected in a sterile vial. The salt solution used to wash the mucous membranes of the nose and throat was practically normal and was freshly made for each case. The instruments used were a Goodale syringe, a nasal douche, nasal forceps and applicators.

To secure the specimen the patient was seated directly before the operator and first instructed to gargle with a mouthful of salt solution which was then secured in a sterile bottle; next the nasal douche was filled with salt solution and used alternately in each nares as follows:

With the patient's head slightly tipped back, until the floor of the nares is approximately horizontal, the salt solution is allowed to flow in gently. The douche is then removed, the nares closed with the thumb and finger of the operator. The head of the patient is next brought forward as far as necessary to allow the salt solution to run out through the opposite nares (this is brought about by releasing pressure on the appropriate side), and the fluid is caught in the sterile bottle. In order to expel the last portions of salt solution, and at the same time to remove the residual mucus and nasal secretion, the patient is instructed to blow gently through the open nostril. The procedure is then repeated on the other side. The applicator, tipped with sterile absorbent cotton, is used repeatedly along the floor of the nasal cavities and gently passed back into the pharynx in order to clean up and remove those portions of mucous and nasal secretions which cannot be obtained by simple irrigation. The mouth is now either swabbed with sterile absorbent cotton, or, if the patient is old enough to understand, is instructed to chew the pledget of absorbent cotton, this being done in order to secure the saliva. If the tongue is at all coated, some of this material is wiped off as well.

The Goodale syringe, filled with salt solution, is now introduced into the mouth and passed back gently until the tip is inserted under the uvula and directed upward and forward into the pharyngeal vault, when the contents of cylinder (containing about 3 ccm. salt solution) is expressed quickly and the syringe withdrawn. The vestibules of the nasal cavities having previously been plugged with sterile absorbent cotton, the head of the patient is lowered immediately to allow the salt solution to drain into the absorbent cotton. These pledgets of cotton are added to the other secretions in the sterile bottle, and the patient is instructed to blow gently, first through one, then through the other nostril, into the collecting bottle. The applicator, tipped with cotton, is again brought into play in order to clean up the cavities still further. This process is repeated two or three times in each case until the cavities are fairly well cleared out, the end in view in every case being to secure a large amount of material with as little discomfort as possible to the patient.

#### EXPERIMENTAL TECHNIC.

The material thus collected was cooled and brought without delay to the laboratory packed in ice. It was then passed through a Berkfeld filter, warmed to about 30° C. and injected into the brain and peritoneal cavity of monkeys (Macacus Rhesus).

A small gimlet hole was bored in the skull on each side over the frontal lobes (under ether anesthesia). About 4 ccm. of the filtrate was then introduced into each cerebral hemisphere and the remainder was injected into the peritoneal cavity.

A brief account of the eighteen cases follows:

Case No. 1. F. F., age five, male, American, living in Springfield, Mass. Sanitary condition of dwelling good. No other case in the family. The boy appeared to be well developed and nourished, and the mother says was always healthy.

Acute febrile attack Sept. 25, 1910, followed by paralysis of the muscles of deglutition and vocal cords, with aphonia on the sixth day.

The general features of the acute attack were nausea and vomiting, starting on the morning of Sept. 25, and recurring at intervals during the next twenty-four hours, temperature of 103° F., restlessness and

* Report to the State Board of Health of Massachusetts, February, 1911.

wandering of mind, pain and tenderness lasting a few days in the neck muscles and right leg, sore throat and aphonia, persistent constipation.

On Sept. 13 (twelve days before the acute febrile attack), tonsils and adenoids were removed at a Springfield hospital.

The boy was first seen by one of us early in October, 1910. He was in a very nervous condition and all reflexes were exaggerated. He could swallow with difficulty, though his voice was returning. The throat was slightly injected and there was some bronchial cough.

On Nov. 5, when the specimen was secured for inoculation, he was still very nervous, and the throat symptoms persisted, but the paralysis had practically disappeared.

*Monkey (1).* On Nov. 5, 1910, 4 ccm. were injected into right brain, 4 ccm. into left brain, and 50 ccm. into peritoneal cavity. Normal recovery from the anesthesia. Never showed any suspicious symptoms, though on Nov. 11, temperature was 103.3° F. Dismissed from observation Feb. 2, 1911.

CASE No. 2. D. Y. (American born of Scotch parents), age five, living in Ludlow, Mass. Sanitary condition of dwelling good. No other case in family. Had scarlet fever and was in Springfield Isolation Hospital from Aug. 6, 1910, to Sept. 24, a period of seven weeks, during which time there were cases of anterior poliomyelitis in the same isolation hospital. During his stay there the child had a bad sore throat and several cultures were taken, all of which proved to be negative for the diphtheria bacillus.

Patient returned to Ludlow, Sept. 24, and two weeks later (Oct. 7) acute febrile attack developed, followed two days later by paralysis of right arm and both legs.

The general features of acute attack were: Nausea and vomiting, fever, 102° F., retraction of head, brain symptoms (listless and stupid), pain in head which had lasted two days, when paralysis of right arm and both legs appeared. Urine was negative. Vomiting and diarrhea accompanied the febrile attack and the diarrhea continued for several weeks, being followed finally by constipation.

On Nov. 5 (four weeks after his febrile attack) specimen was secured for inoculation. The child was still in bed with a temperature of 101° F. There was bronchial cough, the throat was slightly injected and paralysis of both legs and right arm persisted.

*Monkey (2).* On Nov. 5, 1910, 4 ccm. were injected into right brain, 4 ccm. into left brain, and 85 ccm. into peritoneal cavity. The animal recovered promptly from the operation and never showed suspicious symptoms. Nov. 10, temperature 104.8° F. Dismissed from observation Feb. 1, 1911.

CASE No. 3. V. P., age four, female, born of American parents, living in Springfield, Mass. Well developed and nourished. Sanitary condition of dwelling good. No other case in the family.

Acute attack Oct. 11, 1910, with fever, pain and tenderness along spine. Paralysis developed seventy-two hours later involving both legs.

On Nov. 5, when specimen was obtained for inoculation, the child was in good health, the walk was ataxic.

*Monkey (3).* On Nov. 5, 1910, 4 ccm. were injected into right brain, 4 ccm. into left brain, 50 ccm. into the peritoneal cavity. Monkey recovered well from the anesthesia and remained lively and apparently well. Dismissed from observation Feb. 1, 1911.

CASE No. 4. T. C. (American born of Irish parents), age eighteen, female, living in Springfield, Mass. Sanitary condition of dwelling good. No other case in the family. T. C. well developed and before onset was well nourished.

Acute febrile attack occurred Aug. 18, 1910, and the next day paralysis of both legs, both arms, back and abdomen developed.

The general features of the acute attack were sudden fever, 104° F., intense pain and tenderness in the back and lower extremities lasting six weeks, together with marked change of temperament — irritability. On the second day of attack patient voided a clear green urine with a trace of albumen.

On Nov. 5, when the specimen was taken, the paralysis of both legs and both arms still persisted, and there was slight involvement of intercostals, so that she could not cough properly. She was apathetic and weak, but had recovered in large measure her sunny disposition.

*Monkey (4).* On Nov. 5, 1910, 4 ccm. were injected into right brain, 4 ccm. into left brain, 75 ccm. into peritoneal cavity. Recovered promptly from the operation, but on Nov. 7 (two days later) was unusually quiet, did not climb and hid his face. The next day (Nov. 8) the temperature was 102.5° F., and he was placed in a separate cage. On Nov. 9, his disposition seemed changed, he did not express fear and could be approached without being excited. No paralysis; walked on four legs.

On Nov. 10, he seemed weak and dazed and temperature was 101.4° F. On Nov. 11, would not eat except when fed by hand. Pupils equal, reacted to light. Temperature, 100.4° F. Hand and wrist on right side weaker. Nov. 12, general weakness, moved in circles to the left, head and eyes turned to the left. Temperature, 98° F. Died Nov. 13, 3 P.M. Autopsy showed a hemorrhage in the right anterior lobe in the white matter, with pus in the left brain near the motor area for the arm. Cortex was markedly congested, the dura apparently normal.

CASE No. 5. R. T., age five, male (American born of Irish parents), living in Springfield, Mass. Sanitary condition of dwelling bad. Patient well developed and nourished. No other case in family.

Acute attack Oct. 6, 1910, with high fever and sore throat. Paralysis of both legs developed a week later.

On Nov. 5, when specimen was obtained for inoculation, paralysis was disappearing. Tonsils were still swollen, however, and there was some bronchial cough.

*Monkey (5).* On Nov. 5, 1910, 4 ccm. were injected into right brain, 4 ccm. into left brain, 65 ccm. into peritoneal cavity. The animal recovered promptly from the anesthetic, but the next morning did not use right arm, which hung limp. Tendency to lean towards right. Nov. 7, both the right arm and right leg were weak. Would not eat. On Nov. 9 he ate better and used right leg somewhat, but right arm was still limp. Temperature, 102° F. The condition improved somewhat, but the lameness of right arm and right leg persisted. It is most probable that the paralysis was the result of mechanical injury at the time of the operation. Dismissed from observation Feb. 2, 1911.

CASE No. 6. A. L. T., age five, male, American, living in Middleboro, Mass. Sanitary condition of dwelling good. No other case in the same family, but younger brother was sick with dysentery about the same time. Lived an out-of-door life. For a couple of weeks before onset was fussy and irritable.

Acute attack Oct. 25, 1910, with the following general features. Fever ranging from 100° to 104° F., delirium, pain and tenderness general, but more pronounced in legs, disturbance of vision and speech lasting two days. Inclined to jump and twitch. Reflexes absent. Paralysis appeared two days after onset, involving the left leg.

On Nov. 13, when specimen for inoculation was

obtained, patellar reflex was absent. Paralysis of left leg persisted. General condition improved.

*Monkey* (*6*). On Nov. 13, 1910, 4 ccm. were injected into right brain, 4 ccm. into left brain, 50 ccm. into peritoneal cavity. Recovered promptly from the operation. On Nov. 15 developed nervous symptoms, with irritability, and nodding of head when disturbed. Was held by the other monkeys as though ill. The nervous symptoms gradually disappeared, but the monkey became weaker — refused to eat. Chloroformed Nov. 9. Autopsy showed an old tuberculous lesion of the lung with a generalized tuberculosis throughout the abdominal organs.

CASE No. 7. E. H. W., age eight, male (American born of Scotch parents), living in Middleboro, Mass. Sanitary condition of dwelling good. No other case in the family at this time. Patient well developed and nourished.

Acute attack Sept. 17, 1910, preceded by vomiting, accompanied by fever (102° F.), frontal headache, pain and tenderness on left side, also right shoulder and arm, coryza, cough, constipation. Paralysis appeared five days later involving the left leg. Slight difficulty in voiding urine.

On Nov. 13, when the specimen was obtained for inoculation, patient was but slightly ataxic in his gait, paralysis was disappearing and general condition was distinctly on the mend.

*Monkey* (*7*). On Nov. 13, 1910, 4 ccm. were injected into right brain, 4 ccm. into left brain, 75 ccm. into peritoneal cavity. Recovered well from the operation and soon began to climb and jump. Nov. 15 exhibited trembling or shivering motions. Otherwise negative. Dismissed from observation Feb. 2, 1911.

CASE No. 8. K. J. W., age ten years, male (American born of Scotch parents), living in Middleboro, Mass. Older brother to the preceding case. Sanitary condition of dwelling good. In intimate contact with his brother during the course of his acute illness. Felt well, however, up to the day of acute attack, which occurred Nov. 3, 1910, with high fever accompanied by pain and tenderness in back of neck, lasting forty-eight hours. There were also gastro-enteritis and vomiting.

Paralysis of right leg was noticed on fourth day.

On Nov. 13, when specimen was obtained for inoculation, leg was still paralyzed, the tonsils were injected and there were coryza and cough.

*Monkey* (*8*). On Nov. 13, 1910, 4 ccm. were injected into right brain, 4 ccm. into left brain and 50 ccm. into peritoneal cavity. Recovered promptly from the operation, and nothing abnormal was noted subsequently. Dismissed from observation Feb. 2, 1911.

CASE No. 9. A. T. McE., age six years, female (American born of Irish parents), living in North Easton, Mass. Sanitary condition of dwelling fair. No other case in family. Onset Nov. 21, 1910, with coryza, fever, pain and tenderness in abdominal region. Paralysis of both legs appeared three days later.

On Nov. 25, when specimen was obtained for inoculation, patellar reflexes were absent. Patient was unable to walk. Hyperesthesia and pain along spine were decreasing. Throat injected, tonsils swollen.

Gave history of having passed two round worms a few weeks before the acute onset.

*Monkey* (*9*). On Nov. 25, 1910, 4 ccm. were injected into right brain, 4 ccm. into left brain, 70 ccm. into peritoneal cavity. Recovered promptly from the operation. On Dec. 1 had a suspicious way of lifting the left forearm and wrist. This, however, soon passed away. Dismissed from observation Feb. 2, 1911.

CASE No. 10. Dr. R. (age about thirty-five), American, living and practicing in Springfield, Mass. Sanitary condition of dwelling excellent.

Specimen was taken from his nose and throat on Dec. 5, 1910, for the reason that he had seen and been associated with several cases of infantile paralysis. The object was to determine whether or not such persons could possibly act as carriers.

At the time of taking this specimen the doctor was in good health, but had a slight coryza.

*Monkey* (*10*). On Dec. 5, 1910, 2 ccm. were injected into right brain, 4 ccm. into left brain, 65 ccm. into peritoneal cavity. Recovered well from the operation, but on second day trembled as though shivering from the cold. This symptom soon passed away, however. In a few days temperament seemed somewhat altered, was less wild, but no other suspicious symptoms developed. Dismissed from observation Feb. 1, 1911.

CASE No. 11. H. R., age three years, female, well developed and nourished, living in Springfield, Mass. Sanitary condition of dwelling excellent. Living at home with her father, a practicing and school physician.

A younger sister, age nine months, had an attack of poliomyelitis on July 15, 1910, resulting in a complete right hemiplegia.

Acute attack Nov. 23, 1910, with gastro-enteritis, vomiting, fever and pain in her left face. The next day paralysis of the left face was noticed.

On Dec. 5, when the specimen for inoculation was secured, paralysis of the left face persisted, throat was injected, and tonsils were enlarged. Otherwise, general condition of health good.

*Monkey* (*11*). On Dec. 5, 1910, 4 ccm. were injected into right brain, 4 ccm. into left brain, 60 ccm. into peritoneal cavity. On Dec. 6, seemed to be lame in right leg and had a tendency to fall to the right side. Pupils equal and reacted to light. Did not exhibit usual fear and refused to eat. On Dec. 7, seemed delirious and moved continually in circles to the right. The condition gradually improved so that by Dec. 14, the monkey climbed and jumped much as usual, but still exhibited lameness of right arm.

Chloroformed Dec. 21 and near the right motor area was found a blood clot which accounted for the paralysis.

CASE No. 12. M. B., age twenty-one, female, American, living in Springfield, Mass. Sanitary condition of dwelling good. No other case in family. Library assistant, well developed and nourished.

Acute attack Dec. 4, 1910. Slight rise of temperature, marked change of temperament, pain and tenderness in the neck, paralysis of right face and neck. For three or four weeks before onset, constipation, which still persists.

On Dec. 8 when specimen was obtained for inoculation, paralysis of right face was still present. Throat injected, tonsils hypertrophied, adenoids present, lower turbinates swollen, injected and bleed easily.

*Monkey* (*12*). On Dec. 8, 1910, 4 ccm. were injected into right brain, 4 ccm. into left brain, 60 ccm. into peritoneal cavity. Recovered promptly from the anesthetic and never showed suspicious symptoms.

Dismissed from observation Feb. 2, 1911.

CASE No. 13. S. S., age two years three months, male, Hebrew, living in Chelsea, Mass. Sanitary condition of dwelling fair.

Acute attack Dec. 10, 1910, with fever, coryza, bronchial cough, pain and tenderness in right knee. Paralysis appeared on the same day involving the right leg.

Child well developed and nourished.

On Dec. 15, when specimen was obtained for inoculation, paralysis had disappeared.

*Monkey* (*13*). On Dec. 15, 1910, 4 ccm. were injected

| Epidemiological and Clinical Data. | | | | | | | Experimental Data. | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Case. | Condition before onset. | Date of onset. | Character of onset. | Date of paralysis. | Extent of paralysis. | Condition of patient when specimen taken. | Time after onset when specimen taken. | Monkey. | Amount of filtrate injected and sites. | Results. |
| F. F. Male. Age, five years. | Sore throat. | Sept. 25, 1910. | Gastro-intestinal upset with fever. | Oct. 1, 1910. | Muscles of deglutition and vocal cord. Complete aphonia. | Nervous, sore throat, paralysis disappeared. | Six weeks (i. e., on Nov. 5, 1910). | No. 1. | 4 ccm. Right brain.<br>4 ccm. Left brain.<br>50 ccm. Peritoneum. | Negative. |
| D. Y. Male. Age, five years. | Sore throat. Convalescing from scarlet fever. | Oct. 7, 1910. | Gastro-intestinal upset with fever. | Oct. 9, 1910. | Complete. Right arm and both legs. | Complete paralysis right arm and both legs, fever, cough and weak. | Four weeks (i. e., on Nov. 5, 1910). | No. 2. | 4 ccm. Right brain.<br>4 ccm. Left brain.<br>85 ccm. Peritoneum. | Negative. |
| V. P. Female. Age, four years. | In good health. | Oct. 11, 1910. | Febrile. | Oct. 13, 1910. | Complete of both legs. | Recovering from paralysis, walks slightly ataxic gait. | Three weeks (i. e., on Nov. 5, 1910). | No. 3. | 4 ccm. Right brain.<br>4 ccm. Left brain.<br>50 ccm. Peritoneum. | Negative. |
| T. C. Female. Age, eighteen years. | In good health. | Aug. 18, 1910. | Sudden chill. Fever. No prodromal symptoms. | Aug. 19, 1910. | Both legs and both arms; back, abdomen, intercostals. | Paralysis persists, atrophy. | Six weeks (i. e., on Nov. 5, 1910). | No. 4. | 4 ccm. Right brain.<br>4 ccm. Left brain.<br>75 ccm. Peritoneum. | Paralysis right arm. Died seventh day. Abscess in left motor area. |
| R. T. Male. Age, five years. | In good health. | Oct. 6, 1910. | Febrile. | Oct. 20, 1910. | Both legs. | Coryza. | Four weeks (i. e., on Nov. 5, 1910). | No. 5. | 4 ccm. Right brain.<br>4 ccm. Left brain.<br>65 ccm. Peritoneum. | Paralysis right arm (mechanical). |
| A. L. T. Male. Age, five years. | Irritable for two weeks. | Oct. 25, 1910. | Febrile. Delirium and pain. | Oct. 27, 1910. | Left leg. | Paralysis persists. Reflex absent. | Two weeks (i. e., on Nov. 13, 1910). | No. 6. | 4 ccm. Right brain.<br>4 ccm. Left brain.<br>50 ccm. Peritoneum. | Nervous symptoms on third day, became very weak and died on twenty-fifth day. Generalized tuberculosis. |
| E.H.W. Male. Age, eight years. | In good health. | Sept. 17, 1910. | Febrile. With pain and vomiting; coryza. | Sept. 22, 1910. | Left leg. | Paralysis disappearing, ataxic gait improving. | Seven weeks (i. e., on Nov. 13, 1910). | No. 7. | 4 ccm. Right brain.<br>4 ccm. Left brain.<br>75 ccm. Peritoneum. | Negative. |
| K.T.W. Male. Age, ten years. | In good health. | Nov. 3, 1910. | Febrile. With gastro-enteritis, pain. | Nov. 7, 1910. | Right leg. | Paralysis persists. Coryza and cough. | Ten days (i. e., on Nov. 13, 1910). | No. 8. | 4 ccm. Right brain.<br>4 ccm. Left brain.<br>50 ccm. Peritoneum. | Negative. |
| A. T. McE. Female. Age, six years. | Passed two round worms two weeks before attack. | Nov. 21, 1910. | Febrile. With coryza and pain. | Nov. 23, 1910. | Both legs. | Paralysis persists. Reflex absent, pain diminished, throat injected, tonsils swollen. | Five days (i. e., on Nov. 25, 1910). | No. 9. | 4 ccm. Right brain.<br>4 ccm. Left brain.<br>70 ccm. Peritoneum. | Negative. |
| *Dr. R. Male. Age, thirty-five years. | In good health. | | | | | | Dec. 5, 1910. | No. 10. | 2 ccm. Right brain.<br>4 ccm. Left brain.<br>65 ccm. Peritoneum. | Negative. |

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|---|---|---|---|---|---|---|---|---|---|---|
| H. R. Female. Age, three years. | In good health. | Nov. 23, 1910. | Febrile. With pain. | Nov. 24, 1910. | Left face. | Paralysis persists, throat injected, tonsils enlarged. | Twelve days (i. e., on Dec. 5, 1910). | No. 11. | 4 ccm. Right brain.<br>4 ccm. Left brain.<br>60 ccm. Peritoneum. | Paralysis right leg and arm, brain symptoms. Chloroformed sixteenth day. Blood clot in left motor area. |
| M. B. Female. Age twenty-one years. | In good health. | Dec. 4, 1910. | Febrile. With marked change of temperament. | Dec. 4, 1910. | Right face. | Paralysis persists, pain. | Fourth day (i. e., on Dec. 8, 1910). | No. 12. | 4 ccm. Right brain.<br>4 ccm. Left brain.<br>60 ccm. Peritoneum. | Negative. |
| S. S. Male. Age, two years three months. | In good health. | Dec. 10, 1910. | Febrile. With coryza. | Dec. 10, 1910. | Right leg. | Cough, coryza. Paralysis disappeared. | Fifth day (i. e., on Dec. 15, 1910). | No. 13. | 4 ccm. Right brain.<br>4 ccm. Left brain.<br>20 ccm. Peritoneum. | Negative. |
| A. B. Female. Age, twelve months. | Vomiting and peevish. | Dec. 8, 1910. | Febrile. | Dec. 9, 1910, | Left arm. | Paralysis persists. | Seventh day (i. e., on Dec. 15, 1910). | No. 14. | 4 ccm. Right brain.<br>4 ccm. Left brain.<br>20 ccm. Peritoneum. | Negative. |
| M. F. B. Female. Age, nine months. | Fretful, otherwise well. | Dec. 15, 1910. | Febrile. Vomiting and convulsions. | Dec. 17, 1910. | Right leg, right arm, right face. | Fever, convulsions, paralysis persists. | Fifth day (i. e., on Dec. 20, 1910). | No. 15. | 4 ccm. Right brain.<br>4 ccm. Left brain.<br>50 ccm. Peritoneum. | Negative. |
| T. G. Male. Age, twenty-three years. | In good health. | Dec. 27, 1910. | Febrile. | Dec. 27, 1910. | Right arm; later, right leg. | Vasomotor disturbance, throat injected. | Two weeks (i. e., on Jan. 10, 1911). | No. 16. | 3 ccm. Right brain.<br>4 ccm. Left brain.<br>30 ccm. Peritoneum. | Negative. |
| G. S. Female. Age, seven years. | In good health. | Dec. 11, 1910. | Sudden. No fever. | Dec. 11, 1910. | Both legs. | In good health. Tonsils hypertrophied. | Four weeks (i. e., on Jan. 12, 1911). | No. 17. | 4 ccm. Right brain.<br>4 ccm. Left brain.<br>30 ccm. Peritoneum. | Negative. |
| W. C. Male. Age, nineteen months. | In good health. | Jan. 1, 1911. | Fever, stupor, retraction of head. | Jan. 8, 1911. | Right arm and right leg. | Moribund. | Eleven days (i. e., on Jan. 12, 1911). | No. 18. | 4 ccm. Right brain.<br>4 ccm. Left brain.<br>10 ccm. Peritoneum. | Negative. |

* Suspected carrier.

into right brain, 4 ccm. into left brain, 20 ccm. into peritoneal cavity. (In disconnecting the filter, the cotton plug was sucked in and for fear of contamination this material was again passed through a Berkfeld filter.) Recovered promptly from the anesthesia and never showed suspicious symptoms.

Dismissed from observation Feb. 2, 1911.

CASE No. 14. A. B., age twelve months, female, French-Canadian, living in Lawrence, Mass. Sanitary condition of dwelling poor.

Acute attack Dec. 8, 1910, with fever and sore throat. Three weeks previous, the child had spells of vomiting lasting for two days and was generally peevish, then seemed to be in good health up to date of onset. Paralysis involving the left arm appeared on Dec. 9.

On Dec. 15, when specimen was secured, child was in fair health except for the paralysis. She was constipated, however, and throat was sore and injected, tonsils were enlarged and reddened, and there was some cough.

*Monkey* (*14*). On Dec. 16, 1910, 4 ccm. were injected into right brain, 4 ccm. into left brain, 20 ccm. into peritoneal cavity. Recovered slowly but completely from the operation and never showed suspicious symptoms. Dismissed from observation Feb. 2, 1911.

CASE No. 15. M. F. B., age nine months, female (American born, French-Canadian parents), living in Wakefield, Mass. Sanitary condition of dwelling fair. No other case in family. A well developed and nourished child. Breast fed until one month before onset, when she was partially weaned and given cow's milk and baked potatoes.

Acute attack, Dec. 15, 1910, with fever, brain symptoms, vomiting, convulsions, pain and tenderness. Paralysis of right leg, right arm and right face appeared two days later.

On Dec. 18, when specimen was secured, the child was unconscious. She died on Dec. 20. Autopsy refused.

*Monkey* (*15*). On Dec. 19, 1910, 4 ccm. were injected into right brain, 4 ccm. into left brain, 50 ccm. into peritoneal cavity. Recovered promptly from the operation and never showed suspicious symptoms.

Dismissed from observation Feb. 2, 1911.

CASE No. 16. T. G., age twenty-three years, male, Italian, living in Southbridge, Mass. Sanitary condition of dwelling fair. Patient well developed but poorly nourished.

Acute attack Dec. 27, 1910, with fever, pain and tenderness on the right, a week later extending to the left side, along the spine and the extremities, profuse sweating and evidences of vasomotor change of lower extremities.

Paralysis appeared at time of onset and involved at first only the thumb and index finger of the right hand. The next day paralysis invaded the right forearm and arm, thence extending to the right leg, where it was complete. It lasted only two days, however, during which period no reflexes could be obtained.

Jan. 10, when the specimen was secured, all the reflexes were exaggerated on the right, and diminished on the left side. There was no rise of temperature. Tongue clean, tonsils enlarged, soft palate and uvula congested and slightly edematous, noticeable change of temperament.

*Monkey* (*16*). On Jan. 10, 1911, 3 ccm. were injected into right brain, 4 ccm. into left brain, 30 ccm. into peritoneal cavity. Recovered slowly from the anesthesia and never showed suspicious symptoms.

Dismissed from observation February, 1911.

CASE No. 17. G. S., age seven years, female, American, living in Ware, Mass. Sanitary condition of dwelling excellent. No other case in the family. Attended public school and there occupied a seat immediately behind a boy who, just previous to her attack, was out of school with poliomyelitis.

Onset Dec. 11, 1910. No fever. Paralysis appeared the same day involving both legs. Pain and tenderness, more pronounced in the thighs, were a marked feature. Hiccough frequent and persistent since attack. For a week or ten days before her attack the mother remarked a peculiar change of temperament.

On Jan. 12, 1911, when specimen was secured, she was completely recovered, throat normal, tonsils slightly hypertrophied, otherwise a normal child.

*Monkey* (*17*). On Jan. 13, 1911, 4 ccm. were injected into right brain, 4 ccm. into left brain, 30 ccm. into peritoneal cavity. Recovered promptly from the operation and never showed suspicious symptoms.

Dismissed from observation February, 1911.

CASE No. 18. W. C., age nineteen months, male, French-American, living in Ware, Mass. Sanitary condition of dwelling fair. No known history of contact with any other case.

Acute attack on Jan. 1, 1911, with vomiting, accompanied with convulsions and diarrhea, fever, stupor, retraction of head, rigidity of right arm and right leg. Paralysis followed eight days later involving right arm and right leg.

On Jan. 12, when specimen was secured, the baby was moribund, reflexes were absent on both sides though the child could move its legs and arm. Nystagmus, tongue heavily coated, throat injected, tonsils hypertrophied. Died on Jan. 18, 1911. Autopsy refused.

*Monkey* (*18*). On Jan. 13, 1911, injected 4 ccm. into right brain, 4 ccm. into left brain, 10 ccm. into peritoneal cavity. Recovered promptly from the anesthesia and never showed suspicious symptoms. Dismissed from observation February, 1911.

### SUMMARY AND CONCLUSIONS.

The fact that the virus of epidemic poliomyelitis was not demonstrated in the buccal and nasal and pharyngeal secretions of these eighteen cases is not proof that it may not have been there. In any event, the virus would have been greatly diluted, owing to the relative large amount of salt solution used to wash the mucous membrane. Furthermore, under the conditions of the experiment, the virus may have been so attenuated as to be incapable of infecting monkeys.

It is well known that a considerable quantity of the virus from the central nervous system of man is sometimes required to initiate the the infection in monkeys.

Our results must not be construed as in any sense as disproving the assumption that the infection in this disease may be discharged from the mucosa of the upper respiratory passage and enter through the same channel.

## AN EXPERIMENTAL STUDY OF TENDON REGENERATION.*

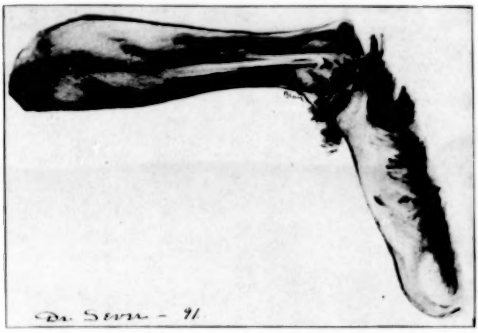
BY JAMES WARREN SEVER, M.D.,

*Junior Assistant Surgeon to the Children's Hospital, Boston; Member of the American Orthopedic Association.*

(From the Laboratory of Surgical Pathology, Harvard Medical School.)

SEVERAL years ago Dr. J. A. O'Reilly, of St. Louis, and Dr. D. P. Penhallow, of Boston, conceived the idea of studying the effects of tendon

* This work was aided in publication by a grant from the Proctor Fund for the Study of Chronic Diseases in the Harvard Medical School.



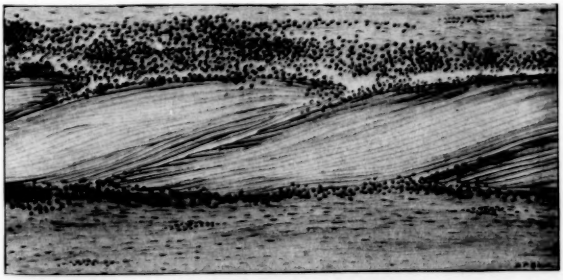
EXPERIMENT No. 3. DRAWING No. 1. Drawing of gross specimen. Skin not adherent to underlying tissues. Note complete regeneration along line of Pagenstecher of a new "tendon" apparently as large as normal. This "tendon" functionated perfectly. Compare drawings A and B.



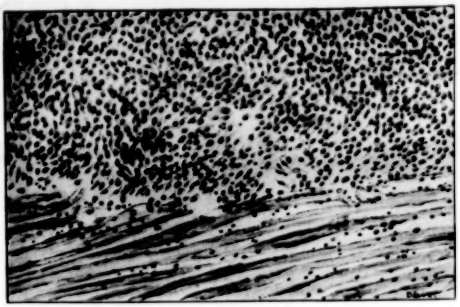
EXPERIMENT No. 3. No. 1. DRAWING A. Shows normal leg of same cat.



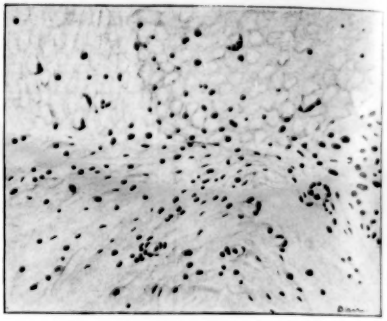
DRAWING B. Shows regenerated "tendon" about line of Pagenstecher. Note adhesions below "tendon," also slight sag to the new "tendon." Note also that the newly regenerated "tendon" is nearly as large as the normal one.



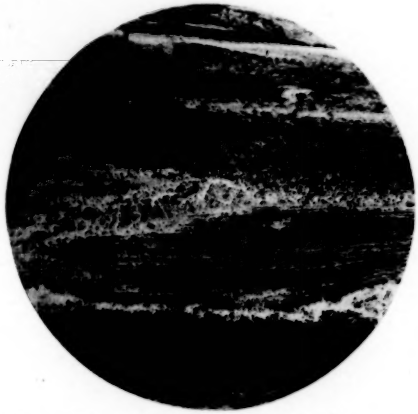
EXPERIMENT No. 3. DRAWING No. 2. Low power. Shows a longitudinal section of the regenerated tissue. It also shows the twisted Pagenstecher strands in the middle, with the proliferation at its outer edges, partially invading the Pagenstecher. The proliferation comes from the tendon sheath and probably from the peritendineum, and is composed of dense fibrous tissue externally and of endothelial leucocytes adjacent to the Pagenstecher.



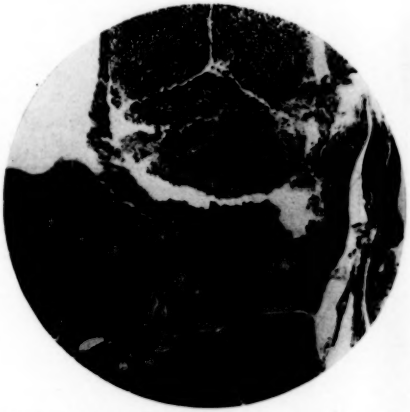

EXPERIMENT No. 3. DRAWING No. 3. Shows high power of edge of preceding longitudinal section. Note marked reaction of the peritendineum and infiltration of Pagenstecher with endothelial leucocytes and fibroblasts. Time, five and one-half months.
A, Pagenstecher.
B, Fibroblasts and endothelial leucocytes.



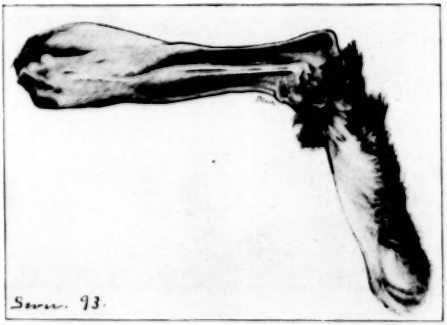
EXPERIMENT No. 3. DRAWING No. 4. Shows a drawing of high power cross section of preceding longitudinal section (see Experiment 3, No. 2). Shows two strands of the twisted Pagenstecher thread with but little infiltration of the Pagenstecher by fibroblasts. Time, five and one-half months.



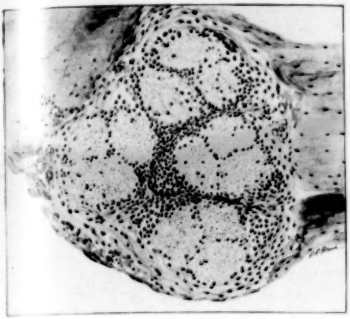
EXPERIMENT No. 3. DRAWING No. 5. Shows a micro-photograph, low power, of longitudinal section corresponding to Drawing No. 2. Shows some infiltration of the strands of thread with fibroblasts and the new fibrous tissue about the thread.



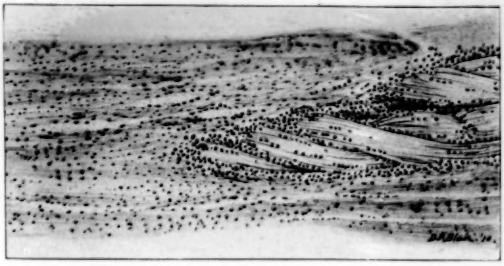
EXPERIMENT No. 3. DRAWING No. 6. Micro-photograph, low power cross section. Shows Pagenstecher thread with infiltration with fibroblasts from the tendon sheath. Time, five and one-half months.



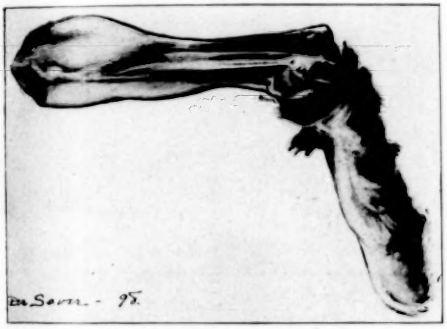

EXPERIMENT No. 4. DRAWING No. 7. See text for detail of procedure. Represents side view of regenerated process. Time, three and one-half months.



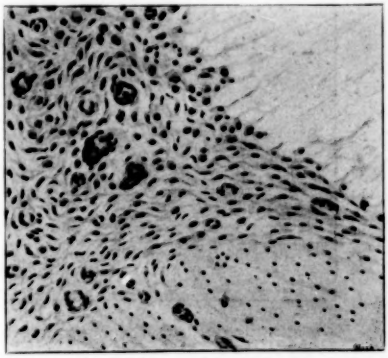
EXPERIMENT No. 4. DRAWING No. 8. Lower-power cross section of Drawing No. 7. Shows silk strands with infiltration of fibroblasts from new formed connective tissue about the silk, more marked than usual. Time, three and one-half months.



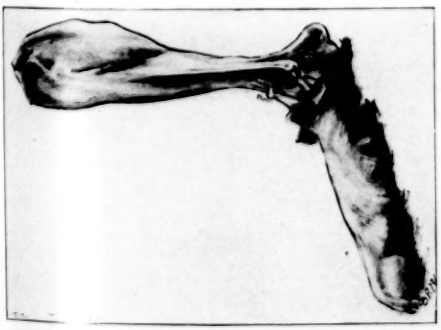
EXPERIMENT No. 4. DRAWING No. 9. Low power longitudinal section of No. 7. Shows infiltration of silk, with fibroblasts from new formed connective tissue about the silk.



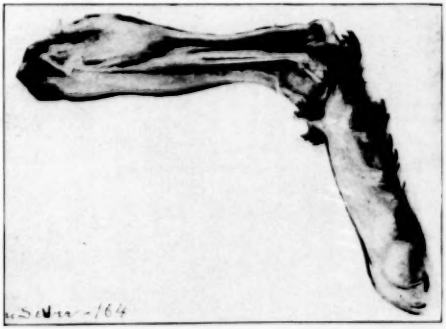
EXPERIMENT No. 5. DRAWING No. 10. Shows gross lateral view of regenerative process between the belly of the gastrocnemius and the os calcis. Time, three and one-half months.



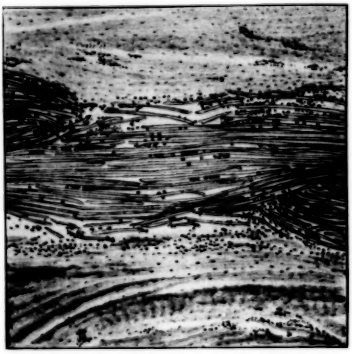
EXPERIMENT No. 5. DRAWING No. 11. A high power cross section of Drawing No. 10. Shows the edges of the silk, with marked proliferative reaction about the silk. Very little infiltration of silk. Also note giant cells. Time, three and one-half months.



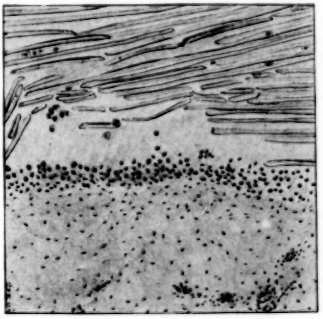
EXPERIMENT No. 6. DRAWING No. 12. Shows result at end of two months, following resection of tendo achillis. Note gap between belly of gastrocnemius and os calcis. There was no regeneration of the tendo achillis. Sections showed nothing of importance. In this case nothing was used to bridge the gap in the resected tendon. The sheath was left flat and open. This shows the importance of the presence of the sheath and peritendineum in regenerative processes. For in this case there was no regeneration of the tendo achillis.



EXPERIMENT No. 7. DRAWING No. 13. Tendo achillis excised for 1¼ in. Tendon sheath *closed*. Skin sewed with continuous Pagensteecher. Cat killed at end of two months. Sections showed normal tendon regeneration. Nothing was inserted in this case to take the place of the resected tendon, but the sheath was closed. For contrast see Drawing No. 12. Note spindle shape of tendon similar to bone callus.



SECTION, low power, No. 14. Shows a low power drawing of a piece of silk thread surrounded by apparently normal tendon. The silk, it should be noted, is not greatly infiltrated by the tissue, although there are a few cells among the fibers, presumably old ones, left from the original inflammatory reaction at the time of insertion. The tissue about the silk is the fascia lata, and the condition is very similar to the one shown by Lange's sections, where the site of the operation was practically the same. The silk was slightly adherent to the surrounding tissue. This silk had been *in situ* about two and a half years, showing that there is very little probability of its becoming absorbed.



No. 15. Shows an edge, under high power, of the low power section shown in No. 14. Note the freedom from either cellular or fibrous infiltration of the silk. Note also that the silk fibers show plainly, and that there has been no tendency towards absorption. The layers of cells along the edge of the silk are probably endothelial leucocytes, the remains of the original proliferative process. The wavy elastic fibrous tissue seen outside of the cells is apparently normal tendon, making a thick tendinous band about the silk. The silk was adherent to this tissue in the gross specimen, but histologically shows very little infiltration.

regeneration by means of animal experimentation, and asked me to assist them in the work. From 1907 to 1909, we have done thirteen operations together on cats. The technical work has been carried out by the Laboratory of Surgical Pathology, and the study of the specimens, the supervision of the drawings, the collection of the data and the study of the literature has fallen to me. Since the operations ceased in 1909, the direction of the work has been entirely in my hands, as has been the final preparation of the paper. I am greatly indebted to Drs. O'Reilly and Penhallow for their early assistance and regret that they were not able to carry this work along to its completion.

This tendon regeneration was to be studied by resecting the tendon and inserting some foreign body, such as silk, linen thread or catgut, about which the tendon might regenerate. It was also planned to note the effect upon regeneration of the tendon, the presence of or removal of the tendon sheath, both with and without the presence of silk or linen threads.

A preliminary report of our work was made by me, after we had been experimenting a little over a year, at the October meeting of the Boston Orthopedic Club, in 1908. At this time some of the gross specimens were shown and the work outlined; since then it has been carried further, and I am now prepared to offer some definite results and conclusions. Before taking up the experiments in detail, it will be of interest to review briefly the literature which has a bearing on the subject.

The older and, in fact, the first method of tendon transplantation was that devised by Nicoladoni in 1880, who sutured the healthy or functioning tendon to the paralyzed or non-functioning tendon. This method proved inefficient on account of the liability of the distal end of the tendon to stretch. The periosteal insertion was originated by Drobnik, and was enlarged upon and applied clinically by Lange.

To obviate this difficulty, Lange first applied the periosteal insertion to clinical cases. By periosteal insertion is meant the method by which the transplanted tendon or healthy tendon is sutured to the point of insertion of the paralyzed tendon, by stripping off the periosteum at that point or at a point nearby. By this method one is able to choose, not only the point of insertion which will give the greatest mechanical efficiency, but also one secures a more permanent and stronger attachment. He showed anatomically that his device was successful by an examination of the tissues a long time after the operation.

Lange, in 1902, reported the findings in one case of a man, two and a half years after operation, where the quadriceps tendon had been lengthened by silk strands, which were inserted into the tibia. He stated that he found a "tendon" as thick as a lead pencil running in the subcutaneous fatty tissue, surrounded by a layer of loose movable connective tissue. There was no true "tendon" sheath present. The newly formed "tendon" was a tough, bluish, round string, about the color of the joint capsule. The silk threads were not destroyed, but had become infiltrated by the new growth.

Lange stated that microscopic examination showed in the central portion of the new "tendon," closely applied to the silk threads, a layer of tissue apparently identical with that of normal tendon, i. e., connective tissue fibers, were arranged parallel to each other, while elastic fibers and blood vessels were almost wholly absent. In the peripheral portion of the "tendon" there were cells and fibers like those of true tendon, but, in addition, blood vessels and fat cells were found here and there. The silk fibers, 12 cm. long, lay in a mass consisting of tendinous tissue, whose wall was from 2 mm. to 3 mm. thick, and whose lower end ran into the periosteum of the tibia.

This finding was of great interest, but his histological description was not sufficiently accurate to settle whether or not the new tissue forming along such silk strands is true tendinous tissue or is merely fibrous connective tissue taking up the function of tendon. It is probable that no true tendon sheath is regenerated around one of these tendons formed where it has been destroyed or where no sheath originally existed.

The experimental work described in this paper was undertaken, of course, with a knowledge and appreciation of Lange's work on the lengthening of tendons by means of silk, and with the idea of obtaining, if possible, a definite pathology and histology following such a procedure; believing that the definite knowledge so obtained would be of great benefit to orthopedic surgery, especially in its application to the increasing number of cases of anterior poliomyelitis.

Besides Lange, Borst, Seggle, Rydygier and Vulpius have done animal experiments on the use of silk in tendon suture, and Vulpius and Lange, from secondary operations, have been able to see the gross results of their primary efforts.

An attempt was made to create a new tendon sheath by Ritter, who in 1908, working in Payer's clinic in Greifswald, used veins taken from animals. He enclosed a stump of the tendon in the ends of the vein and so formed a new artificial sheath along which the new tendon could grow. In Lange's case, however, a condition was found in which only connective tissue regeneration took place, which lead to the formation of a kind of a tendon mass through and along which the silk slides as a working tendon.

Seggle, who has done some interesting research work on tendon regeneration, states that the new tendon is developed after tenotomies by a process of organization of the blood which is poured out from the cut sheath and divided tendon.

Following tenotomies the healing process is as follows: According to Seggle, on the tenth day the inner layers of the tendon sheath consist of long slender spindle cells, with marked fibrillations. By the thirteenth day the regenerative process is already far advanced. By the thirty-eighth day the regeneration extends to the whole

cross section, and by the fiftieth day the climax of the regenerative process has been reached.

Mencière, in 1906, working in an experimental research on the creation of artificial tendons and its application to the human being, used silk thread, folded on itself like a skein, and attached by single threads of this skein at each end to the ends of the resected tendon. He obtained a normally functioning muscle attached to the new muscle in about two months after the operation. Six months after the operation he killed the animal he used for the experiment, and in examining the new tendon found that it was much larger than a large lead pencil and very much larger than the corresponding normal tendon Achilles of the opposite leg. In gross appearance it was normal, i. e., looked like tendinous tissue, and there were no adhesions to the surrounding tissue, "but there was no tendon sheath present."

He stated that the silk thread had become "penetrated, absorbed and replaced by a formation of fibrous tissue, and in place of an artificial tendon of silk there was found a living tendon of fibrous tissue." His statement that the silk is absorbed, of course, does not seem possible in view of the findings of all other investigators, for it is well known that silk is not absorbed by any tissue, but may become thoroughly permeated by new fibrous or tendinous tissue to such an extent that it is well hidden. Mencière had made no microscopic sections, and, if he had, unquestionably would have found the silk imbedded in the new growth.

Anzilotti (Pisa) reported at the Italian Surgical Society in September, 1906, the results of some of his experiments. He found that the sheath played an important part in the integrity and regeneration following tenotomies.

Vulpius uses silk at times for lengthening tendons, but does not think it should be considered a normal proceeding. He does not think that a foreign body such as silk should be introduced except in cases of absolute necessity. In only rare cases is an artificial tendon absolutely indispensable.

Froelich believes that the use of an artificial tendon gives no satisfaction. He believes that they become infected, either immediately or late, and often cut through the skin on account of muscular contractions. It is the exception when they are successful, and that they form an unusual experience without any practical value.

Alexandro Guaccero, in a communication before the Italian Orthopedic Association at Rome in October, 1908, described a number of experiments which he did on rabbits with a view to showing the normal processes of repair at different stages following tenotomies. In some cases he also inserted silk to take the place of the resected tendon. He stated that in some cases after ninety days the silk was "absorbed." Also that when the sheath was removed, the regeneration was fibrous and along the line of the silk. This finding in regard to the absorption of silk is, of course, erroneous. A careful preparation of his microscopic sections, combined with an intelligent study of them, unquestionably would have shown the silk present.

Muller, in Philadelphia (1906), reported the result of some observations on dogs in which he replaced the tendon by a silk cord and found that the tendon was replaced by a fibrous band, which allowed good function.

These are the opinions of those who have used this procedure early, that is, before the technic was perfected, and before experience had shown the method to be of great value, and of general use in many cases.

The details of normal tendon repair I will cite briefly so that the reader may be familiar with the process. (I am indebted to Dr. F. L. Richardson, of the Laboratory of Surgical Pathology, Harvard Medical School, for this abstract from an unpublished paper by him on tendon suture.)

"The process of repair of a tendon that is simply cut without breaking the continuity of the tendon sheath is as follows: Hemorrhage into the interval between the ends of the cut tendon, which is followed in due time by an inflammatory exudate. This exudate infiltrates the surrounding tissue, including the tendon, for a considerable distance about the wound. This exudate, which consists of leucocytes, serum and fibrin, organizes, that is, it is replaced by granulation tissue which arises by proliferation of the cells of the peritendineum, the septa and the inner layer of the tendon sheath, and practically not at all from the inner part of the tendon. The granulation tissue which arises from the peritendineum, the septa and the sheath cannot in the early stages be distinguished from the ordinary granulation tissue, which arises from any unspecialized connective tissue, but it has one important difference, namely, it tends to form a dense and but slightly elastic connective tissue, closely resembling normal tendon.

"The blood vessels which are found in this mass of granulation tissue arise in part from the blood vessels of the tendon sheath. The mass of granulation tissue thus produced is much larger than the diameter of the original tendon and forms a fusiform mass surrounding the cut ends. As the process goes on, the cells become spindle shaped and a very large amount of intercellular material is formed. The blood vessels begin to disappear early, and in small tendon they are almost wanting at the end of two weeks. With this disappearance of the blood vessels, the size of the original mass of granulation tissue diminishes."

The purpose of this work has already been called to your attention, and it only remains for me to give you a description of the experiments and the results.

### DESCRIPTION OF EXPERIMENTS.

In all there were performed by us thirteen operations on as many cats, eleven of which turned out satisfactorily, but two could not be used for our purpose, on account of the animals dying too soon after the operation for purposes of useful study.

The first cat was killed at the end of a week, the second at the end of two weeks and the third

was kept in a plaster cast for four months. Then he was allowed to run about without the cast for four weeks more before being killed, so as to permit active use of the muscles and tendons. The fourth cat was kept in a plaster cast, applied only to the leg operated upon, for four months and then killed. The fifth was killed at the end of fourteen weeks, after having had the leg in a plaster cast, but being allowed to run about, as, in fact, all the cats were while in and out of the casts. The sixth was killed at the end of eight weeks and the seventh at the end of a similar period. The last four were all killed at about three weeks after operation for purposes of control study to the work which we had previously carried out.

No. 1. Experiment 72:

Jan. 1, 1907. Tendon exposed, left fore leg, probably extensor carpii radialis. Isolated, transfixed by two sutures of chromic gut one inch apart. Tendon resected between sutures. Sutures tied loosely. No attempt made to close tendon sheath, which was opened one-half inch. Skin incision closed with chromic catgut No. 1. Plaster. Foot hyperextended.

Feb. 8, 1907. Cat killed at end of five weeks. Piece of suture tendon removed. Section showed nothing of note except hemorrhage.

No. 2. Experiment 73:

Feb. 1, 1907. Tendon extensor radialis exposed, left fore leg. Two-inch portion, about one-half inch in length, resected. Previous to resection, three strands No. 3 silk inserted, which had been dipped previously in boiling paraffine. Considerable of the paraffine coating came off during process of application. No attempt made to close tendon sheath. Skin closed with three interrupted silk sutures. Foot in plantar flexion. Plaster.

Feb. 15, 1907. Cat killed. Wound showed first intention. Sections and gross specimens showed nothing of value.

No. 3. See drawing and sections A and B (Nos. 1, 2, 3, 4, 5, 6):

Feb. 20, 1907. Cat. Ether. Incision over tendo Achilles. Tendon exposed, resected one inch, gap bridged with four strands of Pagenstecher thread. Tender sheath retained. Attempt made to close sheath with catgut. Skin closed by catgut continuous sutures. Plaster removed June 19. Leg in good condition. Allowed to use leg for a few weeks until July 11, 1907. Cat killed. Both tendo Achilles exposed for comparison. Skin not adherent to underlying tissues.

No. 4. See drawings and sections (Nos. 7, 8, 9):

Feb. 28, 1907. Cat. Ether. Resected tendo Achilles, right leg, removed piece of tendon one inch long with sheath. Six strands No. 4 black silk thread used to bridge a gap in tendon. Skin closed by catgut. Plaster bandage.

July 11, 1907. Cat killed. Skin somewhat adherent to underlying tissues at site of wound. Skin wound not apparent. Band of thickening extending from gastrocnemius muscle to os calcis and closely adherent to line of sutures. Apparently good strong "tendon" in place of resected one. Time, three and one-half months.

No. 5. See drawing and section (Nos. 10, 11):

March 7, 1907. Cat. Ether. One and one-half inch of tendo Achilles resected. Two sutures of No. 14 silver. Rubber silk used to bridge gap in tendon. Sheath not sutured. Continuous suture to skin with catgut. Leg put up in plaster at right angles.

June 19, 1907. Cat killed. Skin wound not apparent. Skin not adherent over site of wound, tendon sheath not adherent to new "tendon." Band of new tissue posterior to the silk sutures, resembling tendon. Silk apparently stretched slightly. Thickening about silk sutures making a continuous band from the gastrocnemius muscle to os calcis. Silk movable in sheath. New "tendon" strong and functionating.

No. 6. See drawing (No. 12):

May 25, 1908. Cat. Ether. Operation on left hind leg, one long incision. Tendon excised for one and one-half inches. Skin sewed up with continuous Pagenstecher. Tendon sheath not sewed but left open and flat. Leg put up in plaster at right angles. Good ether recovery.

July 28, 1908. Cat killed. See note on legend. Time, two months.

No. 7. See drawing with legend.

May 25, 1908. Same as previous, except sheath was sewed with continuous Pagenstecher.

July 28, 1908. Cat killed.

No. 8. Experiment 230:

Aug. 9, 1909. Cat. Ether. One inch of tendo Achilles removed. Sheath and peritendineum removed. Two strands of fine silk inserted through, joining the cut ends. Skin closed with continuous catgut.

Aug. 30, 1909. Cat killed.

No. 9. Experiment 231:

Aug. 9, 1909. Operative procedures same as in No. 8, except that there was no silk inserted.

Aug. 30, 1909. Cat killed.

No. 10. Experiment 232. No section.

Aug. 11, 1909. Cat. Ether. One inch of tendo Achilles resected, and two strands of fine black silk inserted. The sheath and peritendineum were removed with the tendon as far as possible, and also an extra effort was made to scrub away the peritendineum with gauze. The skin was sewed with continuous catgut.

Sept. 1, 1909. Cat killed.

These drawings and sections showed nothing of importance except the usual reparative processes, which in the gross specimens were not well marked.

A study of the gross and microscopic specimens from these experiments shows a number of very interesting facts, some of which have already been called to your attention. It is perfectly evident that although the inserted silk serves as a matrix around which dense fibrous tissue forms, it also acts as a more or less inert foreign body. Contrary to the usual belief, the silk does not become infiltrated to any great extent with the new growth surrounding it, but acts as a guide to the regenerative process, whether that process is tendinous or fibrous. Some of these sections (see Nos. 14 and 15) show silk which has been in the tissues for two and a half years without any marked signs of infiltration or absorption. The gross specimen from which these sections were made showed the silk apparently as large and strong as at the time of insertion, and quite distinct from the new tissue about it. If silk were ever absorbed, one would suppose that it would be so at the end of two and a half years. The silk in the gross specimen was adherent to the dense fibrous tissue about it and moved with it.

It should be noted that the proliferation of new "tendon" comes wholly from the peritendineum, which is the all-important structure. The im-

portance of the presence of this structure can be observed by noting the contrast between Figs. 12 and 13.

CONCLUSIONS.

(1) Silk or linen thread is an excellent material to use to lengthen tendons in suitable cases.

(2) The growth of new tissue will penetrate and permeate the silk only slightly, and in some cases not at all, and does not absorb it.

(3) When the peritendineum and tendon sheath have been removed, some foreign body such as silk is essential for regeneration, to serve as a director for the new growth.

(4) With the sheath and the peritendineum present and sutured, no foreign body need be inserted. In this case the new growth is true tendon tissue.

(5) Without the presence of the sheath and the peritendineum, no true tendon tissue can be regenerated. Such tissue is merely fibrous tissue, lacking elasticity and subject to stretching.

(6) The new "tendons" are apt to be larger and stronger than the resected ones, especially when silk has been used to replace the resected portion.

(7) Provided the sheath and peritendineum are preserved and function allowed early, adhesions may not occur. Without the sheath, adhesions may and do occur much more frequently.

*N. B.* I wish to express my thanks for the consideration shown and the invaluable assistance given in this work by Dr. E. H. Nichols, director of the Laboratory of Surgical Pathology, Harvard Medical School.

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## TENDON SUTURE.

BY F. L. RICHARDSON, M.D.

(*From the Laboratory of Surgical Pathology, Harvard University Medical School.*)

THIS article is not meant to be an elaborate discussion of the special technical methods which may be employed in tendon suture, but is intended to call attention to the fundamental principles of repair of tendons which often are neglected by operators.

A tendon is a white, glistening cord, composed largely of bundles of non-elastic connective tissue which contain relatively few cells and give the tendon its strength. Surrounding the entire tendon and running between the bundles of dense connective tissue (septa), and binding them together, is a layer of loose connective tissue, the peritendineum. The cells in the bundles of dense connective tissue are highly specialized, with elongated nuclei and a large amount of intercellular material, the fibers of which run parallel. The tendon bundles are destitute of nerves. The loose connective tissue of the peritendineum and of the septa consists of cells with fibers loosely arranged. The few blood vessels and nerves of the tendon lie in these septa of loose connective tissue. The portion of this loose connective tissue which surrounds the tendon (peritendineum) is much thicker than the tissue of the septa and appears in gross as a thin, filmy sheath and, when picked up with the forceps, closely resembles the connective tissue which binds muscle bundles together. The connective tissue (septa) cannot be recognized in gross, and under the miscroscope the cells in this tissue are not numerous. The peritendineum and the septa stand in the same relation to the tendon that the periosteum and endosteum stand to bone. In fractured bone, the repair comes from the proliferation of the osteoblasts of the endosteum and of the periosteum; likewise in injuries of tendon, repair comes from proliferation of the specialized tissue of the peritendineum and of the septa.

The tendon in many places is surrounded by a definite sheath. The inner layers of the true tendon sheath are composed of connective tissue, in all respects resembling the peritendineum, with dense connective tissue outside. The tendon sheath is, however, much more vascular and contains a larger nerve supply than the tendon.

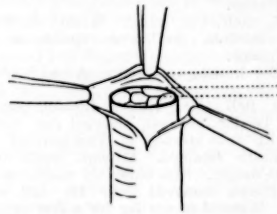



FIG. 1.

Diagram to show the relations of tendon, peritendineum and sheath.
*A*, Tendon sheath held back with forceps.
*B*, Peritendineum.
*C*, Septa.

When a tendon is cut, the ends retract, due in part to contraction of muscle and in part to elasticity of the tendon itself. The peritendineum, being less contractile, and being but loosely attached to the tendon, does not retract so much as does the denser portion and its loose meshwork falls over the cut ends of the tendon.

The process of repair of a tendon that is simply cut without breaking the continuity of the tendon sheath is:

(1) Hemorrhage into the interval between the ends of the cut tendon. This hemorrhage is followed by an inflammatory exudate. This exudate also infiltrates the surrounding tissue, including the tendon itself, for a considerable distance about the wound. (2) The exudate,

which consists of leucocytes, serum and fibrin, organizes, that is, it is replaced by granulation tissue which arises by proliferation of the cells of the peritendineum and of the septa and the inner layers of the tendon sheath and practically not at all from the denser part of the tendon. The granulation tissue which arises from the peritendineum, the septa and the tendon sheath cannot in the early stages be distinguished from ordinary granulation tissue which arises from any unspecialized connective tissue, but it has one important difference, namely, it tends to form a dense and but slightly elastic connective tissue closely resembling normal tendon. The blood vessels which are found in this mass of granulation tissue arise in part from the blood vessels of the septa and peritendineum and in part from blood vessels of the tendon sheath. (3) The mass of granulation tissue thus produced is much larger than the diameter of the original tendon and forms a fusiform mass surrounding the cut ends. As the process goes on, the cells become spindle shaped and a very large amount of intercellular material is formed. The blood vessels, also, begin to disappear early and in small tendons, like the tendons of the wrist, at the end of two weeks, they are almost wanting. With this formation of intercellular material and disappearance of blood vessels, the size of the mass of organizing granulation tissue diminishes, and because of this rapid organization, at the end of about fourteen days, in small tendons, very gentle passive motion and massage should be instituted to stretch and break up the adhesions between the tendon and the tendon sheath.

From the above process certain deductions on the operation of tendon suture can be made. It is not uncommon to see much of the peritendineum carefully dissected off, "cleaning up the tendon," apparently without realization of the fact that the greater part of the repair comes from this very tissue which is so industriously removed. The peritendineum should always be left as intact as possible. It is, however, important that any ordinary connective tissue should be carefully removed from between the ends of the tendon, if the suture is long delayed after the original injury, because this tissue proliferates and leads to the formation of ordinary scar tissue between the ends of the tendon. This ordinary scar tissue will stretch and will seriously impair the function of the tendon and form adhesions.

It is also important that the tendon sheath should be left as nearly intact as possible, and, when feasible, it should be sutured in place about the tendons. If the tube of the tendon sheath can be completely reproduced, it prevents the possibility of the ingrowth of ordinary connective

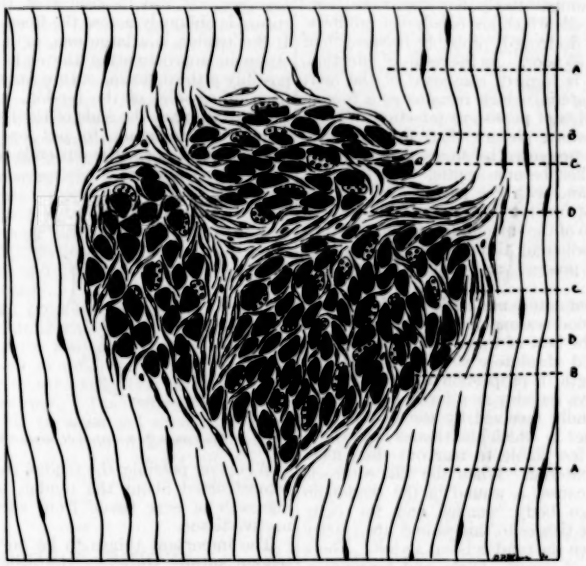



FIG. 2.
Diagram of silk suture in tendon at about the end of twenty days, to show connective tissue growing in between the silk fibers.
*A, A*, Tendon.
*B, B*, Silk fibers.
*C, C*, Giant fibers.
*D, D*, Connective tissue cells.

tissue, and to a certain extent prevents the newly formed cells of specialized connective tissue from forming diffuse adhesions that will cause trouble when attempts at motion are commenced.

The wound should be left perfectly dry because any blood that may be left behind not only retards the process of healing by leaving a greater amount of material to be organized, but it increases the amount of adhesions between tendon and tendon sheath and retards the return of perfect function.

It is hardly necessary to lay stress on performing any operation under aseptic conditions, but it is particularly important that tendon suture should be aseptic because a large part of the tendon, i. e., the intercellular fibrils, has little or no vitality. If bacteria infect a wound of the tendon, the comparatively few specialized connective tissue cells which are capable of proliferation are easily destroyed, probably because their blood supply is so poor. As the result of infection, a large slough is formed, composed of the inert intercellular material which remains as a foreign body and a nidus of persistent infection. There is no more forlorn picture than the resistant, sloughing mass presented by an accidental tendon wound which has become septic, with the long convalescence and with the partial and possibly complete loss of function, not only of the sutured tendon, but also of the surrounding tendons, which have become adherent through extension of the inflammatory process and the long-enforced immobility.

Many different suture materials have been used, but there are good reasons to believe that twisted silk is by far the best of them. It can be boiled and so rendered absolutely sterile. It has considerable strength in proportion to its size. Although it always remains as a foreign body, it is flexible and kindly received by the tissues, and from the manner in which the tissues heal about it, it is much less liable to tear out than most other suture material. When the silk suture is introduced, it causes a wound in the tendon in which a foreign body remains and the early reactions of the tissues to this wound are exactly the same as when the tendon is cut across. There is an exudate of serum, fibrin and leucocytes, with a little blood, which goes in between the individual fibers of the silk. This exudate is replaced by granulation tissue of the specialized type which arises from the peritendineum and septa, and there are numerous giant cells which form about the silk fibers. The granulation tissue is early converted into specialized connective tissue, like the tissue that forms between the cut ends of a tendon, and since this tissue runs everywhere between the fibers of the silk thread, it virtually splices the silk into the tendon as one rope is spliced into another, instead of incasing it as happens with some other suture materials.

Because the fibers of the tendon are arranged parallel, with their axes in the same line as the pull of the tendon, and because the material binding the bundles together is very loose, sutures are very likely to pull out unless some special method of placing them is used which will make the pull across the fibers of the tendon instead of parallel to them. There are numerous ways of placing these sutures, one of the best of which is shown in the illustration. The first stitch is introduced in the shorter end of the tendon about a quarter of an inch from the cut end. (1) The suture is passed through the tendon transversely and (2) then back parallel to the first stitch at about the same distance from the cut end, but a little to one side of the first stitch. A half knot is tied, not too tight. (3) The same suture is then passed through the other end of the cut tendon, and while the assistant holds the cut ends together, the suture is (4) passed back parallel to the third stitch, a half knot is tied and the two free ends of the suture are securely tied together. It will be seen that the pull of this suture is obliquely across the fibers of the tendon. If the tendon is a large one, or if there is much strain in approximating the ends, a second and possibly a third similar suture may be introduced from other sides of the tendon. As this suture tends to displace the ends of the tendon laterally, it may be necessary to put one through-and-through suture near the cut ends to hold them in close approximation.

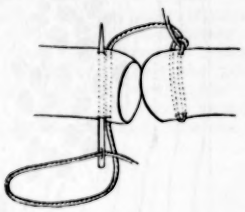


FIG. 3.
Diagram to show method of suturing described.

Wherever possible, the tendon sheath should be reconstructed about the tendon to prevent the ingrowth of scar tissue from surrounding connective tissue.

The important things to be borne in mind in tendon suture, stated in the order of their importance, are:

(1) Asepsis. (2) Preservation of peritendineum. (3) Approximation of ends. (4) Restoration of tendon sheath. (5) Dryness of wound.

## Clinical Department.

### NOTE ON A CASE OF PARALYSIS AGITANS AND CEREBRAL ARTERIOSCLEROSIS.

BY WM. PEARCE COUES, M.D., BOSTON.

A NUMBER of points about this case seem worthy of a brief report. The patient was a gentleman of seventy-three, married, of superb physique and previous good health, but for occasional attacks of lumbago and a question of gallstones some years ago. His habits were excellent; his life had been a very strenuous one. For three years past there

was noticed slight though increasing mental impairment. Tremor of the hands was first noticed about seven months previously. The attacks to be described would come on quite suddenly, there seemed to be an almost perfect cycle in the different manifestations. The blood pressure was 210, 200 and 160 at various times. There was a faint trace of albumen in the urine at different times. The heart and lungs were not abnormal. The attacks were ushered in by great mental irritability preceded by sleeplessness. Delirium would follow, violent and constant. Restraint was absolutely necessary at this tine. Quite suddenly a period of complete unconsciousness with relaxed sphincters would supervene, lasting for hours. Accompanying this part of the attack were transient paralyses. At this time the respiration was as low as three or four to the minute at repeated intervals. At different times there was absolutely no respiration for three quarters of a minute; then one or two breaths would be taken, and the process gone over again. Many times it appeared as if death were a question of minutes, but the pulse was never completely lost. The attacks lasted over a period between three and four weeks. For two days respirations were between four and ten to the minute repeatedly. From 4 A.M. Aug. 6 to 10 A.M. Aug. 8 the respirations were recorded in the nurse's book thirty-five times; the lowest was 3; the highest, 8 to the minute. Aug. 8 they arose to 16 and from this time improvement was slow but steady.

Hyoscine, the bromides, iodide of potassium, codeine and hydrotherapy had not the slightest effect on the intense restlessness and wild delirum which threatened to wear the patient out. Today, about six months after this period, the patient feels very well. The mind is absolutely clear; he is able to walk and drive and enjoy life. He writes well, though with some difficulty. The characteristic gait and tremor are all the symptoms left. There has been no return of the respiratory embarrassment.

## Reports of Societies.

### AMERICAN GASTRO-ENTEROLOGICAL ASSOCIATION.

FOURTEENTH ANNUAL MEETING, HELD AT THE BELLEVUE-STRAFFORD HOTEL, PHILADELPHIA, PA., WEDNESDAY AND THURSDAY, APRIL 19 AND 20, 1911.

#### THE PRESIDENT'S ADDRESS: THE IMPORTANCE OF TONUS IN THE MECHANICAL ACTIVITIES OF THE ALIMENTARY CANAL.

DR. WALTER B. CANNON, of Boston, Mass., said that the view that tonicity of the neuromusculature of the alimentary canal is a fundamental necessity in the appearance of rhythmic movements gives an explanation of many features regarding digestion and harmonizes many diverse observations. It gives a reasonable explanation of the existence and importance of extrinsic motor nerves; it indicates the function of inhibitory nerves in the reduction or abolition of the tone; it accounts for the failure of efficient motility in atonic states of the stomach and intestines; it is in agreement with the observation that tonic contraction and rhythmic peristalsis reappear later in cases of general body-weakness; it fits admirably with the fact that the stomach of hungry animals is strongly contracted, for then the tonic state makes the organ ready for instant action on swallowing food. Indeed, I am willing to believe that the sensation of hunger results from tonic contraction of the empty stomach.

#### STRETCHING OF THE PYLORUS IN BENIGN STENOSIS.

DR. MAX EINHORN, of New York City, read this paper, which was divided into two parts. In the first he described the stretching of the pylorus in children by means of an instrument called the infantile pyloric dilating catheter. This was a flexible tube with an inflatable rubber balloon at its end. In order to introduce it beyond the pylorus, the infant must first swallow either a small duodenal bucket or a metal olive attached to a silk string. After having ascertained that this has wandered beyond the pylorus, the dilating catheter is pushed along the silk thread into the duodenum, the balloon inflated and the instrument withdrawn.

Dr. Einhorn described the cases of two infants with congenital stenosis of the pylorus in whom he had applied this treatment. One patient had entirely recovered; the other had not been benefited.

In the second part of the paper, the author considered the subject of stretching of the pylorus in the adult, and described a new instrument, called the pyloric dilator and diaphane, consisting of a pyloric dilator with a tantalum (cold) lamp at its end. The advantage of this instrument consisted in the fact that it was possible by means of it to ascertain whether the end is in the stomach or the duodenum by means of internal illumination. The author then proceeded to describe three cases of real benign stenosis of the pylorus that had been very much benefited by the treatment. In order to insure success, there must be no active ulceration in or near the pylorus; nor must the stricture be too far advanced.

DR. MORRIS GROSS, New York, did not consider it possible to get such a tube through a stenotic pylorus. He thought that if Dr. Einhorn had succeeded in getting his dilator to pass, either stenosis did not exist at all, or it was present to such a slight degree that stretching was not called for.

DR. S. J. MELTZER, New York, said that it did not sound very plausible to him that a single passage of the instrument could have been sufficient to re-establish. function. Nobody had succeeded in stretching the cardia in so short a time, yet pylorospasm was much harder to reach than cardiospasm.

DR. A. L. BENEDICT, Buffalo, admitted frankly that he could not, as a rule, get a tube down through the pylorus, and said that bile on the end of the thread was no proof that the tube had entered the duodenum. He thought that a little medication would usually overcome the condition in a case of spasm.

DR. CHARLES D. AARON, Detroit, stated that he had pulled the tube through the pylorus, whether he had dilated it or not, fourteen times in a patient, with the result that she had gained eight pounds and was still increasing in weight.

DR. JESSE S. MYER, St. Louis, said that Dr. Einhorn's experience proved that the condition called pylorospasm did exist, and that it was evident that his method was curative in a certain number of cases.

DR. WILLIAM GERRY MORGAN, Washington, D. C., cited a case in which the patient had had no symptoms on the first night after passing the dilator, probably owing to the psychic effect produced by that procedure, the pylorospasm recurring the next night. At opera-

tion it was found that no stretching would probably have been effective, owing to the nature of the cicatrix.

DR. J. C. JOHNSON, Atlanta, remarked that stenosis does not mean absolute closure. He thought that the fact that the size of the lumen can be increased by the withdrawal of instruments passed through the pylorus promised much in the treatment of these conditions.

DR. MELTZER remarked that any foreign body in the duodenum near the pylorus would normally increase the pyloric contraction.

DR. EINHORN agreed with Dr. Meltzer regarding this, but that if the resistance at first encountered was gradually lessened with the same sized bulb, one could conclude that there had been a real stricture. He considered his method applicable only to beginning strictures.

### THE OPERATIVE TREATMENT OF IMPERMEABLE CARDIOSPASM.

DR. WILLY MYER, New York, said that the cure of impermeable cardiospasm by means of dilatation is difficult or impossible. Therefore, operative measures will often be required. Von Mikulicz and Wendel attacked the cardia from the abdomen. It is said that the trouble can also be successfully and permanently cured by way of the thorax. In support of this view, I will mention a case in which a cure was obtained by means of thoracotomy, tearing the nerve filaments that enter the esophagus on each side from the pneumogastrics, and reducing the large esophageal pouch above the diaphragm with the help of a double plication.

### CARDIOSPASM IN INFANTS, WITH REPORT OF CASES.

DR. WILLIAM GERRY MORGAN, Washington, D. C., stated that reports of cases of idiopathic dilatation of the esophagus occurring in young children have appeared in medical literature from time to time, but that in a very few instances has stenosis of the cardia not due to injury been noted.

Cardiospasm with dilatation of the esophagus occurring in infants under one year of age has not thus far been reported; and it was with such cases that this paper had to deal. He had had such a case, which was treated by Dr. Einhorn's method; and had also had a case of cardiospasm in an adult which had been treated by gradual dilatation with bougies, the patient failing all the time. I stretch the cardia with Dr. Einhorn's forcible cardia dilator. This patient is now eating everything, and has gained 19 lb. in weight.

### REMARKS ON CARDIOSPASM.

DR. S. J. MELTZER, New York, referred to a case of cardiospasm published by him twenty years ago under the term "dusphagia," in which he had given the entire clinical course of cardiospasm and predicted what would be found at autopsy. The patient did not die for five years after this, and circumstances prevented him from publishing the autopsy findings. He then stated that the absence of the deglutition sound in the stomach when it is present down as far as the tenth or eleventh vertebra means an elastic stenosis.

DR. J. C. HEMMETER, Baltimore, gave an account of a very severe case of cardiospasm in which the esophagoscope went in; but in which, when the patient swallowed, there came a spasm that prevented anything from going through. He thought that a distinction should be made between this condition and those cases in which the spasm is always present. He had had only temporary success in dilating the cardia by mechanical methods.

DR. J. KAUFMANN, New York City, stated that among his patients a surprisingly large number had dated their first attack of cardiospasm to a hot day on which they had taken ice-cold soda-water. Probably the first spastic contractions led to the development of erosions, which kept up the irritation. He considered hyperacidity as another cause of erosions.

DR. L. KAST, New York, thought that the term "cardiospasm" should be dropped in favor of one suggesting the relation of the cardia with the parts of the digestive tract above and below it. He mentioned a case of reversed peristalsis of the stomach, forcing the food through the esophagus to the mouth.

DR. JESSE S. MYER, did not see why Dr. Willy Myer had not in his case tried gastrostomy with forcible stretching of the cardiospasm, and did not consider the size of the pouch a contra-indication to this procedure.

DR. JOHNSON mentioned a case of almost complete esophageal obstruction in which operation could not be considered, and described how he had managed to get a dilating instrument to pass by means of the galvanic current. The patient will probably get entirely well.

DR. ROBERT T. MORRIS, New York, stated that in cases of cardiospasm careful examinations should first be made to eliminate the possibility of irritation of the vagus at the base of the brain through eyestrain, floating kidney, adhesions in the bile-tract region, a neurotic temperament and the stigmata of decadence.

DR. EINHORN referred to absence of the swallowing sound as an aid in the diagnosis of partial cardiospasm with dilatation of the esophagus, and said that patients treated by his method get entirely well. He did not consider that there should be any difficulty in making the differential diagnosis between this and malignancy.

DR. WILLY MYER stated that his patient had been too weak for an abdominal operation, and it seemed better to adopt the thoracic route. He did not feel sure whether the double plication had really been necessary or not.

### SOME GENERAL REMARKS ON THE TREATMENT OF GASTRIC DISTURBANCES.

DR. J. KAUFMANN, New York, stated that correct treatment requires correct diagnosis, and referred to the progress made in the reading of gastric analyses, especially regarding the relationship of motor and secretory disorders, which assists in directing treatment along the right lines. Aside from properly interpreting disorders of gastric function, we have to consider their pathological meaning. There must be a differentiation of primary and secondary gastric disturbances. Among the latter, those caused by chronic appendicitis, cholelithiasis, etc., are much emphasized at present. While undoubtedly occurring, their frequency is greatly overrated, and too much importance is given to this special etiological factor, at the cost of others that are known as provokers of gastric disturbances. Every etiological factor should be taken into account. At the same time, the condition of the stomach proper requires consideration, even in cases of secondary gastric disturbances.

DR. JOHN A. LICHTY, Pittsburg, said that in spite of medical treatment carried on for a long time in cases of hyperchlorhydria, patients would often continue to oversecrete, although they might improve in general health. Quite a number of such cases, he thought, could be improved by surgical intervention. This continuance of oversecretion after the removal of the original irritant was attributed to cell-habit.

THE GASTRIC WEAK LINE IN WOUNDS OF THE ABDOMINAL WALL.

Dr. Robert T. Morris, New York City, stated that failure of union of the abdominal-wall wound after many of the stomach operations seems to call for special explanation. The failure of union apparently means a trophic disturbance, and this incidentally corresponds to the area of superficial sensory disturbance described by Head for the gastric zone. It is probable that irritation of the nerves of the stomach, referred to their respective segments of the spinal cord, is continued as an impulse to the superficial gastric area, which is commonly irritated coincidently with irritative processes of the stomach. This feature has been recorded with reference to hyperesthesia of skin zones, but the question of trophic nerve disturbance leading to failure of operative processes in the superficial gastric zone seems to have escaped attention previously.

Dr. J. C. Hemmeter said that before accepting the hypothesis of Dr. Morris, it would be necessary to prove that the stimulus went from the gastric zone to a segment of the cord from which the trophic nerve came out.

Dr. Kast considered the idea a very happy one, and said that it would again attract attention to the viscerocutaneous reflex and to the mutual reflex association between the internal organs and certain areas of the skin.

Dr. Meltzer was surprised that the idea should not have suggested itself to Dr. Morris that the stimulus might be not a nervous, but a chemical one. He thought it possible that it might be due to bile and pancreatic secretion that the stitches gave way.

Dr. A. G. Gerster, New York, said that this occurs after operations in every region of the body, and thought Dr. Meltzer's explanation quite plausible. Anesthesia alone was often sufficient to disturb the pancreatic and gastric secretions so much as profoundly to change the chemical processes of the body for a long time after the operation.

Dr. Morris stated that the fact that repair did not take place in a case in which there was irritation of the pylorus had led him to the conclusion that there was a trophic disturbance in that particular group of nerves coming from a certain definite segment of the cord.

A CASE OF BANTI'S DISEASE.

Dr. J. Fuhs, Brooklyn, said that the case of Banti's disease that he wished to present was successfully treated by splenectomy, the patient afterward passing through an attack of typhoid fever and an operation for appendicitis. He emphasized the remarkable results that followed splenectomy in this case; the lasting improvement and the ability to combat infection, and also the restoration of the blood to its normal condition as to the formed elements and to a marked increase in its coagulability.

She had a typical, characteristic attack of typhoid fever, differing in no way from such attacks in patients not operated upon, with the exception of the blood findings, which showed a rather high leucocyte count for a case of typhoid, and a relatively high polymorphonuclear leucocytosis. The reaction to the surgical interference during the course of the typhoid did not present anything characteristic, and her recovery was as rapid as could be expected in a patient not splenectomized.

Dr. Hemmeter exhibited a patient with Banti's disease showing some very peculiar landmarks. This patient had profuse hemorrhage from the bowels, ascites, a very large spleen and cirrhosis of the liver, and had been operated on for appendicitis, and had had typhoid fever. The blood-picture was typical of Banti's disease. The fact that typical splenic cells have been found by Mallory in the portal veins, Dr. Hemmeter considered striking evidence that the spleen is really the starting-point of the trouble, and not the liver.

Dr. Kaufmann referred to a case of his in which some clinical facts pointed to the origin of the disease in the spleen, and said that this organ should be removed when one can be sure that it is the primary seat of the trouble. He did not consider the blood-picture typical, it having been that of pernicious anemia in his case.

Dr. J. C. Bloodgood, Baltimore, said that in three cases of Banti's disease in which splenectomy was not done the results had been just as good as in three in which it was done. The treatment was rest with arsenic and iron.

Dr. L. Kast believed Banti's disease to be only a symptom-complex, and stated that the fact that it might be a syphilitic or a post-syphilitic condition should be borne in mind.

Dr. Fuhs stated that clinically it was impossible to differentiate between cases of Banti's disease and cases in which tuberculosis or granulomata of the spleen were found. He thought that the hemorrhage and the blood-findings spoke in favor of its being a toxemia. The Wasserman reaction had been positive in two recently published cases.

THE RELATION OF SYMPTOMS TO PATHOLOGICAL FINDINGS IN CANCER AND ULCER OF THE STOMACH.

Dr. J. C. Bloodgood, Baltimore, spoke of a case of ptosis of the stomach and colon, the first case that he had resected for ptosis. Medical treatment did not decrease the residuum in the stomach, which amounted to 200 ccm. He resected a little beyond the pylorus to a point that would make a straight line of the greater curvature and of the duodenum, suturing the duodenum to the stomach according to the method of Kocher, and then turning in the end. Dr. Bloodgood considers resection of the stomach for ptosis the simplest resection, because there are no adhesions. Things are so relaxed that there is very little shock. This patient had no post-operative complications after thirty-six hours. He has been relieved of the stasis of material in his stomach and colon, causing constipation; and the diarrhea is also over. The operation has been done ten weeks, and the man has gone back to his work.

The other case was one in which he suspected cancer of the pancreas. On exploring the abdomen, he found a small nodule on the head of the pancreas. There was a large gall bladder; and in the common duct he could feel this nodule. It was not a stone. Dr. Bloodgood considered it impossible to imagine a cancer of the diverticulum of Vater that would not infiltrate the duodenum. Local resections of the tumor itself have been done without any success, owing to the fact that the cancer has been cut through. In this case, in which there were clay-colored stools before operation, bile appeared with the first stool; and the patient is gaining in weight, showing that the loss of the pancreatic secretion is not incompatible with a gain in weight.

Dr. Kaufmann said that if the operation in the first case was performed merely on account of the location and size of the stomach, he did not believe that these were sufficient indications for any operative procedure. Tonus he considered very important in cases of a neurasthenic type. Stagnation might occur periodically, and disappear again; but this condition did not require operation.

DR. EINHORN'S opinion had always been that gastroptosis as such was not at all important, and that retention was almost never associated with it when it existed without any other condition at the pylorus.

DR. HEMMETER called attention to the fact that Dr. Matthews, of Chicago, had shown that removal of the duodenum was almost as fatal as removal of both kidneys.

DR. BENEDICT said that the word "ptosis" should be limited to mean a dropping down of an entire organ, and thought a dilated stomach could be shrunk greatly by methods of medical treatment.

DR. HENRY D. BEYEA, Philadelphia, referred to an operation that he had devised, which consisted simply in shortening the normal ligaments. It was unassociated with danger and non-mutilating.

DR. BLOODGOOD stated that the indication for operation in his case was the fact that the patient had residuum. He had been surprised at the extreme degrees of ptosis that might be present without producing symptoms. His case was not one in which he would have wished to try suture of the ligament alone.

SOME LEADING POINTS IN X-RAY EXAMINATION OF THE DIGESTIVE TRACT; LANTERN-SLIDE DEMONSTRATION.

DR. P. M. HICKEY, Detroit, emphasized the following points: (1) That it is exceedingly unwise to form opinions from the Röntgen examination without due consideration of all the factors in the case; (2) that though a fluoroscopic examination of the gastro-intestinal tract offers certain advantages, yet the inherent danger at the present time does not warrant its wide application; (3) that a stereoscopic method of examination offers certain advantages in selected cases; (4) that by the use of plates made at succeeding intervals after the bismuth meal, the diagnosis and degree of pyloric insufficiency can be determined; (5) that the position of the stomach as found at operation or autopsy does not correspond with the position of the stomach when the patient is in the erect position and when it is filled with food; (6) that the mobility or immobility due to adhesion of the colon can be determined by a careful comparison of the plates made in the erect, horizontal and Trendelenberg positions.

(*To be continued.*)

## Book Reviews.

*Dyspepsia.* Its Varieties and Treatment. By W. SOLTAU FENWICK, M.D. (Lond.), Doctor of Medicine of the University of Strassburg; late physician to the Evelina Hospital for Sick Children, etc. Illustrated. Pp. 485. Philadelphia and London: W. B. Saunders Company. 1910.

Fenwick's work is the result of a large and intimate experience in the treatment of digestive disorders. It is an attempt to describe, to explain and to differentiate the numerous classes of cases where dyspepsia is the common complaint, and to apply rational treatment to each. In the first chapter a classification is given, including gastric indigestion of different forms, and intestinal indigestion. The sub-headings under gastric indigestion are: Disorders of secretion; disorders of motility; disorders of the nervous mechanism; dyspepsia due to inflammation of the stomach; dyspepsia due to displacements of the stomach; dyspepsia due to the presence of foreign bodies and living creatures in the stomach; dyspepsia peculiar to infancy and old age; and dyspepsia due to diseases of other organs. The better known disorders such as hyperacidity, hypersecretion and achylia gastrica are discussed without notable variations from established teachings. Other disorders, however, notably myasthenia gastrica (atony) and dyspepsia due to foreign bodies, are given prominence greater than is consistent with prevailing opinion. Also little attention is directed to the occurrence of latent gastric and duodenal ulcer, the possibility of which has of late years been shown to be so great. The volume gives the reader an impression that the diagnosis of the type of disease is easy and certain in excess of common experience. The work is of value, however, as a description of observations upon a large number of patients, and especially in the detailed recommendations for practical treatment.

*Essentials of Laboratory Diagnosis.* Designed for Students and Practitioners. By FRANCIS ASHLEY FAUGHT, M.D., Director of the Laboratory of the Department of Clinical Medicine and Assistant to the Professor of Clinical Medicine, Medico-Chirurgical College, etc., Philadelphia, Pa. Containing an indican scale in colors, 8 full-page plates and numerous engravings in the text. Pp. 328. Second revised edition. Philadelphia: F. A. Davis Company. 1910.

Faught's manual aims to embody the essentials of laboratory diagnosis without unnecessary elaboration, but with sufficient detail to insure clearness. While such elementary details as the use of the microscope are duly described, full directions are also given for the performance of complicated and new diagnostic methods, such as the Wassermann and the Noguchi serum reactions. The successive chapters deal with the use of the microscope, sputum, blood, the opsonic method, blood pressure, coagulation, blood parasites, animal parasites, determination of the functions of the stomach, feces, urine, cerebrospinal fluid, other body fluids, human milk, bacteriologic methods, serodiagnosis, and the equipment and management of a clinical laboratory. Directions are given in such a way that one unfamiliar with medical laboratory procedures might well acquire proficiency in the common tests without other source of instruction. Those whose knowledge of laboratory methods includes only the older methods will undoubtedly find this manual useful in acquiring familiarity with more advanced laboratory diagnosis. As is necessary in the preparation of a work which describes so much within small compass, chief attention is given to the description of methods practiced by the author rather than to discussion of the various methods in use by different workers. While in a few instances matters that might well be included are not mentioned, and other matters are awarded a prominence that is not generally granted, at least one good way of attaining each object is fully set forth, and one who follows the directions may be confident of his results.

THE BOSTON

# Medical and Surgical Journal.

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## THE ORIGIN OF THE OFFICE OF CORONER.

In the issue of the *British Medical Journal* for May 6 is an interesting abstract of a paper by Dr. F. J. Waldo on "The Origin of the Ancient Office of Coroner." It seems probable that the office was established under Henry I of England, but the earliest known authentic reference to it is in Chapter 20 of the Articles of 1194, providing for the election by each county of three knights and one clerk as "custodians of the crown pleas." It was the duty of these "custodians" to keep a record of all pleas, suits or causes which more particularly affected the king's crown and dignity, especially in connection with the administration of criminal justice. One of the chief objects of doing this, apparently, was to secure for the king any treasure or plunder that might be forfeited to him; hence Bracton, in describing their office, says, "They ought immediately to visit the slain, or the wounded, or the drowned, or those who have died suddenly, and the breakages into houses, and the places where treasure was said to have been found." Thus from this early office of "keeper of the king's pleas" (*custos placetorum coronae*) developed that of coroner or crowner, with a name derived from the Latin title, but with functions much more extensive than those of the modern medical examiner.

In Britton's manual of law, published in 1291, it is stated that the coroner is "a principal guardian of the king's peace, bearing record of the pleas of the crown, of his own views on inquests, and of abjurations and outlawries. He is bound to inquire concerning treasure-trove, wreck, whales, and sturgeons, and to secure them for the king's use." His functions were both judicial and administrative and extended also to cases of rape, arson, sodomy and "infant monsters who had nothing of humanity or who had more of the beast than the man in them, and these the coroner caused to be buried; but the holy faith groweth stronger every day, whereby folk do not burden their souls with such horrible sins so commonly as they used." This bit of contemporary evidence as to the supposed cause of fetal monstrosities, and testimony as to their declining frequency, is most instructive. In all matters that came under the coroner's jurisdiction, his decision was absolute, and there was no appeal from "crowner's quest law." In process of time his duties have become purely medico-legal, but the persistence of the office in all English-speaking communities is evidence of the racial conservatism which has been one of the strongest traits of the Anglo-Saxon.

## LUCRETIUS AND THE PLAGUE.

In the issue of the Journal for April 20 we published an editorial on "Thucydides and the Athenian Epidemic of Plague." A recent number of the *Münchener Medizinische Wochenschrift* calls attention also to "The Clinical Picture of the Plague in Lucretius."

At the end of the sixth book of his "*De Natura Rerum*," the epicurean Lucretius presents in hexameters a consideration of the supposed causes of various pestilences. After briefly describing elephantiasis as endemic in Egypt and trachoma in Achaia, he says of the plague in Attica:

"A mortal, febrile disease once devastated the streets of Athens. At first the victims suffered from burning headache. The eyes became red and inflamed. Mouth and pharynx were injected and beset with ulcers. The tongue was parched. The pains were intolerable. The disease burned inward to the bones; the stomach glowed like an oven. The patients, suffering with unquenchable thirst, would plunge head-first into water cisterns. Medicine was powerless to aid them. Sleepless and helpless, they rolled in agony till death came to relieve them by gangrene or convulsions."

Perhaps the poet exaggerated this horrible picture, after the license of his kind. At all events, it is an interesting piece of classic evidence as to the nature of this great scourge. Lucretius was a contemporary of Cicero, and whether he himself ever saw an epidemic of the plague is uncertain. Livy mentions that the plague broke out in Rome in 430 B.C., and was extensively epidemic in Africa in 130 B.C. It seems probable, even though he had no immediate knowledge of it,

that Lucretius was familiar with the general aspects of a disease whose visitations in his time were fairly frequent, and that his poetic imagination has not led him far astray in the depiction of its clinical symptoms.

## PLOT TO ASSASSINATE PRISON OFFICIALS.

A remarkable plot among the inmates of the State Hospital for Insane Criminals at Matteawan, to assassinate the superintendent and first assistant physician of that institution, has been disclosed in a report just made public, presented to the governor by William Church Osborn, the governor's legal adviser, and Mayor Van Kennen, of Ogdensburgh, who were appointed special commissioners to examine into the affairs and management of the state prisons and reformatories. The plot originated with an Italian patient, a homicidal paranoiac, who, in common with the other inmates, was examined by Drs. Carlos F. MacDonald and Austin Flint, of New York, who were engaged by the commissioners to investigate the mental condition of those confined in the hospital, especially with a view to ascertain whether there was any truth in certain reports which had been circulated to the effect that some persons who were really sane were being held as prisoners there. It is shown that there actually was a conspiracy involving a number of the inmates (certainly a rare combination among insane patients), who had contrived to arm themselves for a common purpose, — the murder of the officials named.

Drs. MacDonald and Flint, as the result of their investigations, made a number of recommendations, among which were the following: That a more rigid discipline should be maintained at the Matteawan Hospital; that the hospital be taken out of the jurisdiction of the State Prison Department and placed exclusively under the control of the State Commission in Lunacy (at present the authority over the institution is divided between these two departments); and that the original theory of maintenance of the institution as a hospital for insane convicts should be changed and that it should be regarded, not as a state hospital for the insane of a special class requiring specialized attention, but as an institution substantially similar to other state hospitals for the insane. They state that though this hospital was originally used for the care of the insane during their term of sentence, they find that the character of the inmates has changed, the bulk of the insane persons under sentence being now maintained at Dannemora Hospital, while the inmates of Matteawan are either those known as "court order" cases, that is, persons accused of a crime and found before conviction to be insane, or persons convicted of some offense whose terms have expired but who are detained because of insanity. They believe that, by following the plan suggested, a larger proportion of cures will result, and that the public attitude of question and suspicion of the management of the institution will be relieved. They, therefore, recommend that the insane persons subject to a prison term who are now in the Matteawan Hospital be transferred to Dannemora, proper provisions being made, and the law so amended that the Matteawan Hospital will be put under the jurisdiction of the State Commission in Lunacy.

The two alienists were able to examine without difficulty seven hundred and sixty-one of the seven hundred and ninety-three inmates. Among the thirty-two who declined to be examined was Harry Thaw, who killed Stanford White, but it is stated that he conducted himself in their presence in such a manner as to leave no doubt of his unbalanced mental condition. The commissioners also engaged the services of Goodwin Brown, who was a member of the State Commission in Lunacy for ten years, and they state in their report that, from their own personal inspection, from the reports of Mr. Brown and of Drs. MacDonald and Flint, and from the outcome of an investigation conducted by the district attorney of Dutchess County (in which the Matteawan Hospital is situated), they are satisfied that no unusual conditions of violence or depravity exist in this institution, and that no patients who are in such condition of sanity as to warrant their discharge are detained there beyond the usual time needed to determine the conditions in each case.

## THE WATER-SUPPLY OF BOSTON.

IN an editorial on "The Metropolitan Water and Sewerage Board," in the issue of the JOURNAL for April 27, we commented on "the present importance and value to the public health" of the extensive works undertaken by the Water Board for the service of Boston and its adjacent towns. The great value of an adequate and reliable water-supply is emphasized at the present time by contrast of the favorable situation of Boston with the drought and impending water-famine now prevalent in other and less fortunate parts of this state and elsewhere. It will be

remembered that last fall there was a serious shortage of drinking water in many towns of western Massachusetts, and this condition bids fair to recur unless there be very early and abundant rains. Unless the situation is thus relieved, serious epidemics of water-borne disease may be expected from deterioration in the quality as well as the quantity of the supply in many regions.

The fortunate position of Boston in respect of water-supply is due to the wisdon and foresight of the Metropolitan Water Board, which fifteen years ago began the establishment of a system sufficient to supply our community for years to come. The board should receive not only gratitude for this service, but support in other measures of public utility which it may advocate.

## HARVARD SCHOOL FOR ADVANCED INSTRUCTION IN MEDICINE.

The Harvard Corporation voted, on May 10, to approve the establishment, in accordance with a plan recently proposed by the Faculty of Medicine, of a School for Advanced Instruction in Medicine. The Overseers at a later meeting consented. It is intended that this new school, which is to be under the direction of a separate dean and administrative board, shall go into operation at the beginning of the academic year 1912-13, that it shall supersede the present graduate instruction and shall ultimately absorb the Summer School of Medicine. Courses will be offered either as all-day courses in general or special subjects or as intermittent courses for students "who live nearby and who want instruction for a part of one or more days in the week," or as research courses for those who wish to do original investigation. The instruction will be provided by existing departments in the school if possible, but if not, new instructors may be appointed, with the title of Lecturer or Fellow. The project for this new school seems full of promise and should establish upon a permanent basis the importance and efficiency of graduate medical instruction in Boston.

## A HOSPITAL FOR PRIVATE PATIENTS.

Public announcement has been made of a proposed hospital in Boston to be devoted solely to the care and treatment of private patients. It has long been an anomaly in our hospital system that the patient who is an object of charity has been provided with greater facilities for the completest treatment than the patient who is both willing and able to pay for such service. The tendency has been for the development of great hospitals under private or municipal control devoted to purely charitable ends. The public interest in these hospitals has been such that their equipment has far surpassed anything hitherto possible in the small hospitals designed for the care of persons able to pay for their residence and treatment. In spite of their necessarily imperfect equipment, the demand made upon these smaller private hospitals has amply demonstrated the need of a larger hospital, in which may be brought under one roof and management the same facilities which are common to our great public charitable institutions. To this end a body of business men and physicians, representing on the one hand the financial interest and on the other the medical profession, and together acting as directors, have proposed and made public a plan to construct and administer a comprehensive hospital for private patients which shall place within the reach of the well-to-do the same advantages which are now offered only to the poor. An outline of the plan has already been published in the Boston *Evening Transcript* of May 22, to be followed by a full prospectus within a week. It should be understood that this hospital, if constructed as designed, is to be thrown open freely to all reputable members of the medical profession, with the same privileges as apply to the physicians who act as incorporators. It is not to be questioned that the time is ripe for such an enterprise as this, and that such a hospital will fill a distinct need in the community, which is rapidly coming to a realization that many, if not all, forms of disease may be more adequately and successfully treated in a hospital than at home. The medical profession and the laity will doubtless look forward with equal interest to the consummation of this unique but entirely reasonable project.

## MEDICAL NOTES.

Smallpox and Bubonic Plague at Amoy. — Report from Amoy, China, states that during the fortnight from May 5 to May 19, there were in that city 43 deaths from bubonic plague and 6 from smallpox.

Yellow Fever in Colombia. — It is reported from Bogota, Colombia, that yellow fever is epidemic in the city of Bucaramanga, capital of

the department of Santander in that country. Sixty cases are said to have occurred during the week ending May 18.

Honorary Degree for Professor Richards. — It is announced from London that the University of Cambridge, England, will confer the honorary degree of LL.D. on Theodore W. Richards, Ph.D., S.D., M.D., professor of chemistry in Harvard College, and now filling the Faraday lectureship in London.

Injury to Professor Haeckel. — It is reported from Jena, Germany, that Dr. Ernst Heinrich Haeckel, professor of zoölogy at the University of Jena, and celebrated for his embryologic researches, sustained a fracture of the neck of the femur on May 16, by falling from a high stool in his library. Professor Haeckel is now seventy-seven years of age.

London Death-Rates in March. — Statistics recently published for March, 1911, show the death-rate for that month in London to have been 16 per 1,000 living. Among the several districts and boroughs the highest rate was 26.0 in Shoreditch, at the east end, and the lowest 8.9 in Hampstead, an open suburb.

Medal Awarded to a Physician's Widow. — Report from Paris states that, on May 16, the Carnegie Fund Committee of France awarded the Foundation gold medal to the widow of Dr. G. E. Mesny, a French physician, who died of the plague on Jan. 12 at Harbin, Manchuria, during the recent epidemic of the disease in that country.

French Vital Statistics for 1910. — Statistics published in the *Journal Officiel*, on May 18, by Dr. Jacques Bertillon, of Paris, indicate that during the year 1910 there were in France 309,289 marriages, 13,049 divorces, 703,777 deaths and 774,358 births. This is the smallest number of births that has occurred in France since 1810. In 1859, there were 1,018,000 births; in 1862, 984,000; in 1887, 899,000. The excess of births over deaths in 1910 was only 70,581, whereas the excess in Germany during the same year was 884,061.

Bequests to Medical Institutions. — The will of the late S. Herbert Howe, of Marlboro, Mass., who died on May 11, was filed last week in the probate court at East Cambridge, Mass. Among several charitable bequests it contains one of $2,000 to the Marlboro Hospital.

The will of the late Dr. Charles A. Oliver, of Philadelphia, contains bequests of $5,000 each to the Wills Eye Hospital and to the College of Physicians of Philadelphia.

American Society of Superintendents of Nurses. — The annual meeting of the American Society of Superintendents of Training Schools for Nurses will be held in Boston on May 29, 30 and 31. At the session on May 29, there will be addresses by Miss Mary M. Riddle, superintendent of the Newton (Mass.) Hospital, and Miss Sara A. Parsons, of the Massachusetts General Hospital; on May 30, by Miss Clara D. Noyes, of the Bellevue Hospital, and Miss J. C. Stimson, of the Harlem Hospital, New York. In the evening of May 30, Dr. Frederick S. Lee, of Columbia University, will deliver a lecture on "Fatigue in Relation to Health and Efficiency." On May 31, there are to be demonstrations at the Massachusetts General Hospital, and in the evening a dinner given by the Massachusetts State Nurses' Association.

Philadelphia Milk Exhibit. — On Saturday, May 20, there was opened in Philadelphia an extensive "milk exhibit," under the co-operative management of the City Department of Public Health, the Philadelphia Pediatric Society, the Veterinary Department of the University of Pennsylvania and the Bureau of Municipal Research. The purpose of the exhibit is to demonstrate the best methods of production, transportation and distribution of milk. In conjunction with it will be held meetings of the American Association of Medical Milk Commissions, the Certified Milk Producers' Association of America and a conference of municipal health officials. There will be numerous daily lectures and demonstrations by physicians and others from this country and from Canada.

Further Note on Case of Nerve "Fusion" in the Issue of Journal, May 11, 1911. — At the date mentioned above, Dr. Henry Feiss, of Cleveland, Ohio, reported a case of infantile paralysis of about five years' standing affecting the internal popliteal, in which a nerve "fusion" was carried out on the popliteals. Up to the time of the last visit mentioned in that report, Feb. 16, 1911, it seemed that a new distribution of muscular power might be taking place, but at a subsequent date, when the case was last seen, May 6, 1911, the case presented about the same characteristics as before the operation. If there was any functional improvement, it was so slight as to be unimportant. In order to leave no false

impression, the author prefers to consider the operation a failure up to the last date mentioned, although there is, perhaps, still a little chance for improvement. The patient is, however, no worse than before the operation. If any further nerve "fusions" are attempted, patients will be selected, the author states, in whom the paralysis is of more recent standing.

## BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, May 23, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 37, scarlatina 31, typhoid fever 5, measles 176, smallpox 0, tuberculosis 53.

The death-rate of the reported deaths for the week ending May 23, 1911, was 18.09.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, May 20, 1911, was 231, against 214 the corresponding week of last year, showing an increase of 17 deaths, and making the death-rate for the week, 17.48. Of this number 122 were males and 109 were females; 225 were white and 6 colored; 148 were born in the United States, 79 in foreign countries and 4 unknown; 58 were of American parentage, 142 of foreign parentage and 31 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 48 cases and 1 death; scarlatina, 35 cases and 3 deaths; typhoid fever, 6 cases and 0 deaths; measles, 169 cases and 1 death; tuberculosis, 68 cases and 20 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 30, whooping cough 2, heart disease 20, bronchitis 2. There were 29 deaths from violent causes. The number of children who died under one year was 42; the number under five years, 61. The number of persons who died over sixty years of age was 63. The deaths in hospitals and public institutions were 105.

Change in West End Call Station. — It is announced by the Boston Dispensary that the West End call station of the district physician has been changed from 44 Chambers Street to the Elizabeth Peabody House at 87 Poplar Street.

Graduating Exercises of Boston City Hospital Training School. — The graduating exercises of the class of 1911 of the Boston City Hospital training school for nurses will be held at 4 P.M. on Friday, May 26, in the surgical amphitheater of the hospital. There will subsequently be a reception in the Vose House. The graduating class this year consists of thirty-eight pupils.

Massachusetts College of Pharmacy. — The annual class day and commencement exercises of the Massachusetts College of Pharmacy were held in Boston last week. The degree of doctor of pharmacy was conferred on sixteen candidates, two of whom were women.

A Death from Smallpox in Boston. — The death of an infant from smallpox was reported in Dorchester on May 16. The house in which the case occurred has been fumigated, and all persons who came in contact with the patient have been quarantined and vaccinated by the Boston Board of Health.

Address by Dr. Pearce. — On the afternoon of Thursday, May 18, Dr. Richard Mills Pearce, professor of research medicine in the School of Medicine of the University of Pennsylvania, delivered at the Harvard Medical School an address on "Experimental Medicine; Its Influence upon the Teaching of Medicine," before the Massachusetts Alpha Chapter of the Alpha Omega Alpha Society.

An Epidemic of Tonsillitis. — During the past fortnight, tonsillitis has been extensively prevalent in Boston and its vicinity, and also to the westward. It is estimated that over two thousand cases have occurred. Without adequate apparent evidence, this epidemic has been attributed to infected milk. It seems much more likely to be due to the dust, heat and high winds that have lately prevailed in both eastern and western Massachusetts.

Report of Boston Infirmary Department. — The fourteenth annual report of the Infirmary Department of the City of Boston contains the record of work done at the Long Island Hospital, and in the almshouses at Long Island and at Charlestown, during the year ending Jan. 31, 1911. There have been 881 inmates at Long Island during the past year and 102 at Charlestown. Twenty-one nurses were graduated from the training school. The trustees recommend the immediate authorization and construction of a hospital addition to accommodate two hundred patients.

Report of Worcester Board of Health. — The annual report of the Board of Health of the

city of Worcester, Mass., for the year 1910, which has just been published, records the vital statistics of the city for that year and presents an interesting record of the activities of the board in health inspection, routine bacteriologic examinations and the investigation and quarantine of infectious diseases. There are appended special reports of the resident physician of the isolation hospital and of the inspector of milk. The publication is a succinct statement of the details of the hygienic administration of a city community.

APPOINTMENTS BY THE BOSTON BOARD OF HEALTH. — It was announced last week that the Boston Board of Health has appointed Dr. Thomas J. B. Dillon, of Roxbury, as medical inspector, "to examine all children under sixteen years of age who apply for certificates allowing them to go to work." Dr. Dillon received his medical degree in 1884 from the Royal College of Physicians and Surgeons, Dublin.

It was also announced that the board has voted to appoint Dr. Francis H. Slack, of the University of Kansas, as secretary to the board, in the place of Mr. Charles E. Davis, Jr., who is soon to retire under the recent act for pensioning city officials. Dr. Slack has formerly served as director of the laboratory of the Boston Board of Health.

CONCORD DEACONESS HOSPITAL. — In a recent issue of the JOURNAL we noted a generous gift of land and money for the erection of a Deaconess Hospital at Concord, Mass. On May 17, a public meeting was held in the Concord town hall to stimulate general interest in this new building. Dr. Edward W. Emerson, of Concord, presided, and addresses were made by Dr. Maurice H. Richardson, of Boston, and Dr. Alfred Worcester, of Waltham, Mass. "The hospital, which is now in process of erection, is of semi-fireproof construction, its walls and floors being made of glazed terra cotta tile and concrete. Located on one of the highest points in the near vicinity of Concord, it has a splendid outlook in every direction. The building will provide an operating suite, administration offices and room for eleven beds on the first floor, dining room, kitchen and other accommodations in the basement and nurses' home on the second floor. It is expected during the warm months the capacity of the hospital will be augmented by the use of tents. Within a radius of seven miles of the hospital are seven communities which will be privileged to use its facilities."

## NEW YORK.

THREE BEQUESTS TO HOSPITALS. — Among the charitable bequests in the will of the late Martin Herman, of New York, are $5,000 each to the Montefiore Home and Hospital for Chronic Invalids and the Mount Sinai Hospital and $1,000 to the Beth Israel Hospital.

APPROPRIATION FOR FILTRATION PLANT AT JEROME PARK. — On May 11, the Board of Estimate and Apportionment appropriated $8,690,000 for the completion of the eastern basin of the Jerome Park reservoir and the installation there of a great filtration plant. The establishment of this plant has long been desired, and the matter was repeatedly urged by Dr. Darlington when he was president of the Board of Health.

SUPPOSED DEATH FROM EATING ICE CREAM. — The recent death of a little girl two years old at Yonkers is believed to have been due to poisoning from eating an ice cream sandwich, bought from a street vender. Two companions, aged respectively five and six years, who also partook of the ice cream, have been in St. John's Hospital suffering from ptomaine poisoning.

APPOINTMENT OF DR. LUCAS AT MUSEUM OF NATURAL HISTORY. — The trustees of the American Museum of Natural History have appointed Dr. Frederick Augustus Lucas director of the museum. Dr. Lucas, who is at present chief curator of the Brooklyn Institute of Arts and Sciences, is a native of Plymouth, Mass., and in 1882 was appointed osteologist at the United United States National Museum. At this institution he was made curator of the department of comparative anatomy in 1893, and director of the department of biology in 1902. In 1904 he received the appointment of curator-in-chief of the Brooklyn Institute. He is especially known as the author of several publications on North American mammals.

OPENING OF DEPARTMENT OF PUBLIC HEALTH. — On May 15 a Department of Public Health was inaugurated at the American Museum of Natural History, and at the same time there was opened in one of the wings of the building an exhibition showing the work and plans of the Metropolitan Sewerage Commission, to be on public view for a month. Among those who made addresses on this occasion were Calvin Tomkins, commissioner of docks and ferries,

representing Mayor Gaynor; Dr. Soper, president of the sewerage commission; Professor Winslow, curator of the public health department of the museum; and Dr. Harvey W. Wiley, of Washington.

Death from Broken Neck after Twelve Years. — Among other charitable bequests in the will of Walter E. Duryea, formerly of Glen Cove, Long Island, N. Y., who died recently after having survived for twelve years with a broken neck, are $15,000 to the Roosevelt Hospital, as a memorial to his father and mother; $5,000 to the Nassau County Hospital, at Mineola, Long Island; $7,000 to the Mountainside Hospital, at Montclair, N. J.; and $2,000 to the Montclair Fresh Air and Convalescent Home. Mr. Duryea met with his accident in making a dive in shallow water at Oyster Bay in 1899, and his case attracted unusual interest at the time. As his family were wealthy, he had every possible advantage in the way of care. He was taken to Roosevelt Hospital, where after consultation with eminent neurologists he was operated on by Dr. Robert F. Weir, assisted by other prominent surgeons. The principal legatee of Mr. Duryea's estate, it is interesting to note, is Miss Eleanor Peregrine, who was one of his nurses at Roosevelt, and who has devotedly attended him ever since he left the hospital.

A Physician's Golden Wedding. — On May 15, there was celebrated the golden wedding of Dr. Louis A. Rodenstein, a prominent practitioner long identified with the Washington Heights section of the city. Mrs. Rodenstein comes of a very long-lived family, in which there have been, including her own, six golden weddings during the last sixty years. She is a grand-niece of Peter Cooper and the daughter of the late Daniel F. Tiemann, who was mayor of New York in 1857 and 1858, and both her parents lived to the age of ninety-three. Dr. Rodenstein was born at Frankfort on the Main, and was brought to this country when eight years old. The family settled at Austin, Tex., and while there he attended the school of Dr. Anson Jones, who was the last president of the Republic of Texas. He was graduated from the medical department of the University of Pennsylvania in 1859, but has spent all his professional life in New York. He was one of the founders of the Manhattan Hospital, on 131st Street, now the J. Hood Wright Memorial Hospital, and until a few years ago remained on its attending staff.

# Current Literature.

## Medical Record.

### May 13, 1911.

1. Bartlett, W. A. *Mistakes in the Diagnoses of Chronic Lesions: Their Causes and Prevention, Based on Some Illustrative Cases of Chronic Lesions Involving the Mid-Lower Abdomen and Pelvic Regions.*
2. Hays, H. *Acute Tonsillitis and Its Treatment.*
3. *Rosanoff, A. J. *The Prevention of Insanity: Hygiene of the Mind.*
4. Davis, J. E. *The Etiology of Pancreatic Diseases.*
5. Bell, G. H. *Ocular Manifestations of the Peripheral Affections of the Fifth Cranial Nerve.*
6. Warbrick, J. C. *The Chlorides, Phosphates and Sulphates of the Urine in the Last Stage of Pulmonary Tuberculosis.*
7. Squier, J. B. *Post-operative Urinary Incontinence; Urethroplastic Operation.*
8. Dawbarn, R. H. M. *Short Talks with my Students and Others: Being Random Suggestions for the Younger Practitioners.*

3. Rosanoff reviews the prophylactic measures against insanity which have been practiced with some success. The causes of insanity are essential and contributory. The essential causes are heredity, alcohol, syphilis, head injuries. To prevent bad heredity, laws prohibiting the marriage of defectives have been enacted in certain states, and some benefit may have been derived from such legislation. Measures for the prevention of conception — vasectomy, salpingectomy, castration — have been practiced with satisfactory results. For the prevention of alcoholism, three systems have been partially effective: (1) the Gothenburg system in Sweden, (2) prohibition, (3) local option. The prevention of syphilis is closely limited to the control of prostitution. Prophylactic treatment has been of almost unfailing efficacy according to the reports of some medical officers of the United States Navy. To prevent head injuries little can be done save in protective legislation to diminish the number of serious accidents.

The contributory causes of insanity are innumerable, especially frequent being unhappy love affairs, pregnancy, abortion, childbirth, lactation, overwork, worry, fright, grief. Prophylaxis here is difficult. For the neuropathic individual every feature of life presents possible dangers. From childhood up the adjustment between him and his environment must be nicely controlled. The recognition of the neuropathic makeup is obviously of the highest importance. [L. D. C.]

## New York Medical Journal.

### May 13, 1911.

1. Greene, C. L. *Asthenia Universalis Congenita.*
2. Wright, J. *A Contribution to the Study of Fats and Lipoids in Animal Tissue.*
3. Stevens, G. T. *A Series of Studies of Nervous Affections in Relation to the Adjustments of the Eyes.*
4. Rosenberger, R. C. *A Case of Typhoid Osteomyelitis Successfully Treated with a Vaccine.*
5. Barnes, F. M., Jr. *Pupillary Disturbance in the Alcoholic Psychoses.*
6. Pedersen, V. C. *Therapeutics of Syphilis.*
7. *Williams, P. F. *A Bacteriological Study of the Human Bile.*
8. Weinstein, H. *Visceroptosis, an Improved Abdominal Binder.*
9. Taylor, W. H. *The Open Treatment of Fractures.*

7. Williams reports an interesting bacteriological study of human bile. He finds the gall bladder a very frequent and favorable nidus for the lodgment of bacteria of various kinds. He demonstrated by cultural tests and animal inoculation the presence of B. aerogenes capsulatus. Typhoid bacilli were obtained in two out of twelve cases with a typhoid history. B. typhosus may reside in the bile only intermittently. [L. D. C.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

MAY 13, 1911.

1. *DERCUM, F. X. *The Rôle of Dreams in Etiology.*
2. LLOYD, J. H. *The So-Called Oedipus-Complex in Hamlet.*
3. *CRAMP, W. C. *Chronic Glanders in Man, Report of a Case; Patient Treated with Glanders Vaccine; Apparent Cure.*
4. THOMAS, J. B. *Case of Choked Disk and Progressive Blindness Due to Sarcoma of the Brain.*
5. KALAYJIAN, D. S. *Report of a Case of Anencephalus.*
6. LEOB, M. J. *Report of Case of Bronchopneumonia, Showing Positive Brudzinski Neck and Collateral Signs.*
7. *RISLEY, E. H. *Treatment of Cancer with Body Fluids and Cancerous Ascitic Fluids.*
8. MENDENHALL, A. M. *Chemical Dermatitis from Incompatible External Applications.*
9. BROWN, I. *A Peculiar Case of Intestinal Obstruction.*

1. Dercum believes that the rôle of dreams in etiology is a very doubtful one. They are probably always symptomatic and never causal and their symptomatic value is of little consequence.

3. Cramp reports an interesting case of chronic glanders in man, which was apparently successfully treated by a glanders vaccine. Cases of chronic glanders are easily overlooked. Multiple abscesses, especially on the extremities without definite cause, should excite suspicion, as in 80% of these cases, multiple abscesses occur. Extreme exposure to bad weather seems to be a predisposing cause. No direct association with horses was demonstrable in Cramp's case.

7. Risley, working with body fluids such as hydrocele, spermatocele and ascitic fluids from cases of cirrhosis of the liver or incompetent heart, and then with ascitic fluids from resistant cases of cancer of the ovary and peritoneum and liver, has found that the cancerous fluids, in a large per cent of cases, act beneficially on the cancer patient and his tumor. Three things are especially noticeable: (1) Relief from pain; (2) retardation of the growth from one to eight months; and (3) a general improvement in the condition of the patient. These results were not obtained even with large doses of the non-cancerous fluids. There is nothing curative in the cancerous fluids, but as a reliever of pain, and in producing other symptomatic improvement, the treatment is valuable. [E. H. R.]

THE ARCHIVES OF INTERNAL MEDICINE.

APRIL, 1911.

1. *EMERSON, H. *Blood Pressure in Tuberculosis.*
2. HELMHOLZ, H. F. *Pyrogenic Action of Salt Solutions in Rabbits.*
3. ADLER, H. M., and BLAKE, G. *The Retention of Alkali by the Kidney with Special Reference to Acidosis.*
4. *ROHDENBURG, G. L., BULLOCK, F. D., AND JOHNSTON, P. J. *The Effects of Certain Internal Secretions on Malignant Tumors.*
5. TODD, J. L. *The Duration of Trypanosome Infections.*
6. MARINE, D., AND LENHART, C. H. *The Pathological Anatomy of the Human Thyroid Gland.*
7. RULON, S. A., JR., AND HAWK, P. B. *Studies on Water Drinking. IV. The Excretion of Chlorides following Copious Water Drinking between Meals.*
8. *BOOS, W. F., NEWBURGH, L. H., AND MARX, H. K. *The Use of Digipuratum in Heart Disease.*
9. GAGE, J. G. *A Case of Strongyloides Intestinalis with Larvæ in the Sputum.*

1. Emerson reports clinical observations of blood pressure in tuberculous individuals and experimental results with tubercle products on cats and dogs. He finds hypotension so important that it should be sought for as carefully as pulmonary signs are in suspected cases. A failure of normal cardiovascular response to exercise or change of position often indicates susceptibility to tubercular infection. The causes of low blood pressure in tuberculosis are probably primarily a toxic action on the vasomotor center in the medulla, and secondarily progressive cardiac atrophy or degeneration. The secondary anemia with its diminished albumin, salts and hemoglobin content serves to add to the hypotension from purely physical causes in the blood stream. The result of hypotension in tuberculosis or in any other condition is insufficient capillary pressure, more or less venous stagnation and insufficient nourishment with resulting atrophy or degeneration of the essential organs of the body. The treatment of tuberculosis should take into consideration the need of assisting in every way the return to normal pressure. Prognosis can as safely be based on the alteration in the blood pressure as on changes in the pulse or temperature.

4. Rohdenburg, Bullock and Johnston conclude as follows from an experimental and clinical investigation of the relations between certain internal secretions and malignant tumors: (1) Removal of the thyroid, thymus and testes appears to decrease the susceptibility to cancer; (2) removal of glands in immune animals leads to lessened immunity to cancer; (3) extracts of thymus, thyroid, spleen, pancreas, pituitary and testes on injection tend to increase immunity against cancer; (4) similar extracts, on injection into cancerous organisms, alleviate pain, reduce tumors and even cause them to disappear; (5) many tissues contain some common element which is capable of producing immunity.

8. See *Miscellany*, p. 769. [L. D. C.]

BRITISH MEDICAL JOURNAL.

APRIL 15, 1911.

1. *ALLBUTT, C. *An Address on Arteriosclerosis and the Kidneys.*
2. *MACKENZIE, W. *The Oliver Sharpey Lectures on Cardiac Failure. Lecture II.*
3. POWER, D' A. *The Surgical Treatment of Chronic Colitis.*
4. BENIANS, T. H. C. *The Use of Vaccine in Acute Mastitis.*
5. JOYNT, E. P. *Erythema Nodosum Following Measles.*
6. HARRIS, J. D. *A Case Illustrating the Value of Surgical Treatment of Pulmonary Cavities.*
7. CORBETT, D. *The Use of Scopolamine-Morphine in Labor.*
8. FLOWER, N., AND WILKS, S. *Evidence of Recent Severe Illness afforded by the Nails.*

1. *Cf. British Medical Journal*, April 22, 1911.

2. Mackenzie, in the second of the Oliver Sharpey Lectures on heart failure, speaks on the estimation of heart failure and the significance of symptoms. He first reviews the essential factors in maintaining circulation, the nature of the heart's functions and the bearing of disease processes on the heart's work. He then discusses the symptoms of beginning heart failure, (1) due to changes in the organ itself, (2) due to impaired function, and (3) those due to reflex stimulation of other organs. In estimating the heart's strength, he emphasizes the fact that each individual has his own standard by which his heart must be gauged; he discusses the difference in the significance of various symptoms in various individuals. The simplest test of cardiac strength or failure is how it responds to effort. He calls attention to the inadequacy of many of the present methods of measuring heart strength and urges the greatest attention to how the heart of any person responds to the stress and strain of daily life as the best and safest guide to its real efficiency. [J. B. H.]

APRIL 22, 1911.

1. *LANE, W. A. *A Clinical Lecture on the Kinks which Develop in our Drainage System in Chronic Intestinal Stasis.*
2. *CHAPPLE, H. *Chronic Intestinal Stasis Treated by Short-Circuiting or Colectomy.*
3. *ALLBUTT, C. *An Address on Arteriosclerosis and the Kidneys.*
4. MCKENZIE, I. *On the Interdependence of the Circulatory and Respiratory Systems.*
5. WARD, G. R. *Hepatic Distomiasis (Sheep Rot) in Man.*

1. Lane discusses the various kinks developing in certain places in the bowel, notably in the vicinity of the jejunum, near the ileum and at the hepatic and sigmoid

flexures of the colon. These so-called kinks are generally due to intestinal stasis by means of which strain is produced and "peritoneal bands" are formed. He discusses the surgical treatment of this condition.

2. Chapple presents the details of fifty cases of chronic intestinal stasis on which he has operated, making a short circuit usually from the ileum to the iliopelvic colon. In these cases the site of the obstruction, usually due to sagging of the transverse colon, was at this point. The symptoms complained of by these patients were the ordinary ones of constipation. On examination there were painful points over the "abnormally *fixed*" portion of the bowel, and the transverse colon was "usually palpable and hung below the level of the umbilicus." He describes the nature of the operation and his results.

3. Allbutt, discussing arteriosclerosis and the kidneys, first dwells upon the present confusion of ideas and lack of accord in terminology of this condition. He briefly reviews the work previously done on the subject and compares and comments on the opinions of the present day. He discusses in considerable detail the morbid anatomy found in various chronic kidney and arteriosclerotic conditions; he considers the relation of Bright's disease and high pressure, the effect of various infections on the kidneys, nervous factors entering into the problem and the part played by the adrenals. He endeavors to draw a sharp line between the conditions he calls chronic Bright's disease and others largely due to arteriosclerosis which he does not consider as true Bright's disease. [J. B. H.]

## Deutsche Medizinische Wochenschrift. No. 16.

### April 20, 1911.

1. Killian, G. *The Treatment of Inflammatory Diseases of the Nasal Accessory Sinuses.* (Clinical lecture.)
2. Dysenfurth, F. *Investigations of Labyrinth Dizziness and the Electric Stimulation of the Vestibular Nerve.*
3. *Schieck, F. *Experimental Tuberculosis of the Iris and Choroid in Rabbits.*
4. Rippe, G. *Contributions to the Medico-Legal Diagnosis of Gunshot Injuries.*
5. Seyffarth. *Duodenal Ulcer.* (Continued.)
6. Baumstark, R. *A Case of Colitis Gravis.*
7. Gara, S. *An Abdominal Pressure Symptom in Sciatica.*
8. Hackenbruch. *The Abdominal Incision in Cecum Operations.*
9. Gronarz, F. *Complications in Twisted Pedicle of Ovarian Tumors.*
10. *Spaeth, F. *A Case of Genital Tuberculosis Healed by the Roentgen Rays.*
11. Althoff. *The Treatment of Ulcus Cruris.*
12. Zabel, E. *A Case of Purgen Intoxication.*
13. Berger. *Hernia Operations.*

3. Schieck reports from the Institute for Infectious Diseases in Berlin the results of some experiments on rabbits with tubercle bacilli. He takes up the formation of antibodies in certain body fluids, and the effect of tubercular vaccines. He considers that there is a characteristic difference in the manner in which the bovine and human type affect the eye.

10. Spaeth reports a case of genital tuberculosis which, after having been treated unsuccessfully by medicine and surgery, was cured by the Roentgen ray. [C. F., Jr.]

## Münchener Medizinische Wochenschrift. No. 15.

### April 11, 1911.

1. *Wilms. *A New Method for Constriction of the Thorax in Phthisis.*
2. *Burkhardt, L. *Intravenous Narcosis.*
3. Strasburger, J. *Treatment by Radium Emanations.*
4. Schottmüller, H. *Methods of Bacteriologic Study in Puerperal Fever. II.*
5. *Christen, T. *The New Methods of Representing the Force of the Pulse without the Use of Mathematics.*
6. Streit, H. *Acoustic Studies with the Endophonoscope.*
7. Schmidt, P. *The Apparatus and Technic of the Wassermann Test.*
8. Weber, H. *"Spastic Luxation of the Hip" and Changes in the Hip-Joint in Spastic Conditions of the Leg.*
9. Weiler, F. *Observations on Nephritis after Treatment with Salvarsan.*
10. Schreyer, O. *Reports on Treatment of Pulmonary Plague with Salvarsan.*
11. v. Stokar. *The Technic of Intravenous Salvarsan Treatment.*
12. Hoke, E. *The Electrocardiogram of a Case of Total Transposition of the Viscera.*
13. Kuhn, F. *The Transportable Litter-Bed.*
14. Fülleborn. *Observations on Dr. V. Reichmann's "Unusual Filarial Disease. Cure by Salvarsan."*

1. Wilms describes a new method of narrowing the thorax for chronic phthisis. He cuts through the muscles of the back and resects pieces of the ribs. By this method more narrowing is obtained than by resection anteriorly because the costal cartilages allow of considerable movement. Also, the first rib is more easily accessible. He reports one case which did well.

2. The writer says that he has had experience in 250 cases of intravenous narcosis. He recommends particularly a combination of isopral narcosis with ether narcosis, both being used intravenously, and he considers ether preceded by scopolamin-morphine to be nearly as good. The contra-indications are myocarditis, severe arteriosclerosis, nephritis, severe icterus, cholemia, passive congestion and plethora. The more important indications are collapse, severe hemorrhage, cachexia, exhaustion, disturbances of respiration, peritonitis and operations on the head and neck.

5. Christen describes a new instrument for estimating the force of the pulse wave. He first determines the mean blood-pressure and then the volume of the pulse wave by reading a manometer. These multiplied together give the energy value of the pulse. He thinks the instrument will prove to be of great usefulness clinically for comparative work. [G. C. S.]

## No. 16. April 18, 1911.

1. Saenger, A. *Basedow's Disease.*
2. Sudeck, P. *The Surgical Treatment of Basedow's Disease.*
3. Schittenhelm, A., and Weichardt, W. *The Rôle of Hypersusceptibility in Infection and Immunity. II.*
4. Heilbronner, K. *A Fifty-Year Study of Aphasia.*
5. Schmidt, T. *Experiences in the Use and Effect of Salvarsan.*
6. Löhlein, W. *Clinical and Experimental Observations on the Relation of Salvarsan to the Epidermis.*
7. Stucken, H. M. *A Reaction in the Urine said to be Characteristic for General Paresis.*
8. Esau. *Hot-Air Treatment in Dermatoses.*
9. Wiedmann, O. *Description of a Mercury-Free Fermentation Saccharometer for Undiluted Urine.*
10. Baetzner, W. *A Parallel Clamp for Stomach and Intestine.*
11. Neumayer, V. L. *Extension with Codivilla's Nail.*
12. Kanngiesser, F. *The Clinical Picture of Plague in Lucretius.*

## No. 17. April 25, 1911.

1. *Czerny, V., and Caan, A. *Experiences with Salvarsan in Malignant Tumors.*
2. de Quervain, F. *The Röntgen Diagnosis of Round Gastric Ulcer.*
3. Herschel, K. *The Radical Operation of the Ear.*
4. Stühmer, A. *The Question of Salvarsan.*
5. Ehret, H. *Contribution to the Knowledge of the So-Called Diabetes of Pregnancy.*
6. Autenrieth, W., and Müller, G. *The Calorimetric Determinations of Sugar, Creatin and Creatinin in the Urine.*
7. Wadoleceny. *Lip Reading for the Deaf.*
8. Laubenheimer, K., and Caan, A. *An Infection with Tetanus after an Injection of Radiolkarbenzym.*
9. Kanert, J. *Experiences with Hormonal in Chronic Obstipation and Paralytic Ileus.*
10. Grouven, C. *The Secondary Syphilis of Lower Apes and of the Guinea-Pig.*

1. Having tried salvarsan in a series of cases of malignant tumor, the writers say that it is indicated for inoper-

able cases having a positive Wassermann reaction, and that it works best in sarcomata. The benefit is shown in necrosis and softening of the tumor and in relief from pain. [G. C. S.]

BERLINER KLINISCHE WOCHENSCHRIFT. No. 14.

APRIL 3, 1911.

1. FALTA, W., AND SCHWARTZ, G. *Advancement of Growth by Radium Emanation.*
2. LOEWY, A., AND PLESCH, J. *The Influence of the Radium Emanation on Gaseous Exchange and the Circulation of the Blood in Man.*
3. *FRANK, E. *The Relations between the Kidneys, the Suprarenals and High Blood Pressure in Human Pathology.*
4. LEVY-DORN, M. *The Value of the Roentgen Rays in the Diagnosis of Pulmonary Tuberculosis.*
5. HABERMAN, R. *The Cause and Significance of Scapular Grating.*
6. WOLLENBERG, G. A. *A Bone Cyst in the Scaphoid.*
7. BLUMENTHAL, A. *Extensive Necrosis of the Upper Jaw, after Dental Empyema of the Antrum of Highmore.*
8. PELTESOHN, F. *Gummatous Syphilis of the Nose.*
9. WEYL, T. *The Revision of the Imperial Law Concerning Dyes Injurious to the Health.*
10. AUFRECHT. *A Simple and Rapid Method for Quantitative Determination of Uric Acid in the Urine, in Blood and in Other Serous Fluids.*

3. The author reviews some of the work done by others, in attempting to show that increased functional activity of the suprarenal is responsible for increased blood pressure. He then refutes these arguments and cites some cases of his own.

4. By experimental tests on the cadaver, as well as clinical tests, the author states that the x-ray is of assistance in tubercular lung cases, especially the early ones, if it is used in conjunction with physical examination.

NO. 15. APRIL 10, 1911.

1. UHLENHUTH AND MULZER. *Experimental Inoculation Syphilis of Rabbits.*
2. BICKEL, A. *A Transportable Inhalation Apparatus for Radium Emanation with Continuous Regulatable Ray Emanation Supply.*
3. ENGELMANN, W. *Construction and Method of Operation of a New Inhalation Apparatus for Radium Emanation with Standardizable Emanation Supply.*
4. ISRAEL, J. *A Case of Extirpation of a Cavernous Angioma of the Liver.*
5. SENGER, E. *The Formation of a Sarcoma on the Base of a Lupus Carcinoma.*
6. GRABOWER. *The Diagnostic Significance of Laryngeal Paralysis.*
7. *GITHENS, T. S., AND MELTZER, S. J. *The Treatment of Experimental Strychnine Poisoning with Intratracheal Insufflation, and Ether Narcosis.*
8. MEYER, G. *Demonstrations of Manual Artificial Respiration.*
9. EWALD, P. *Flat-Foot Pains and Arthritis Deformans.*
10. *HIRSCHBERG, A. *The Phenomena of Hyperesthesia in Pregnancy.*

7. The authors report absolute control of the convulsions, and ability to save the life of any animal which they poisoned with strychnia. Furthermore, the animals showed no ill-effects afterward, and later at autopsy there were practically no pathological findings.

10. The author attempts to show that there is a marked instability of the vasomotor centers during pregnancy, and that for this reason various phenomena may occur, due to the inability of the body to react as it should. He makes a few remarks about eclampsia, also endeavoring to trace a connection between the disturbed vasomotor centers, the obstacles to proper elimination and the consequent reabsorption. [J. B. S., JR.]

WIENER KLINISCHE WOCHENSCHRIFT. No. 9.

MARCH 2, 1911.

1. BERZE, J. *The Psychology and Pathology of Affection.*
2. HART, C., AND LESSING, O. *Investigations on the Value of the Antiformin Method for the Demonstration of Tubercle Bacilli in the Tissue.*
3. BIACH, P., AND CHILAIDITI, D. *Cardiac Murmur and Size of the Heart.*
4. STEIN, R. I. *The Epidemiology of Microsporia in Vienna.*
5. SCHLEISSNER, F. *Acute Adenoiditis; A Contribution to the Theory of Node-Fever.*
6. *SEMELEDER, O. *A Contribution to the Question of the Function of the Leg with Quadriceps Paralysis.*
7. KLAUBER, O. *Number and Distribution of Doctors in Austria.*

6. The author presents an interesting and ingenious diagrammatic study of the mechanics of locomotion in cases of quadriceps paralysis. The condition is particularly important in view of the present prevalence of poliomyelitis, and the numerous orthopedic procedures devised to palliate its paralytic sequelæ. [R. M. G.]

NO. 10. MARCH 9, 1911.

1. WEIL, E., AND KAFKA, V. *The Permeability of the Meninges, Particularly in Progressive Paralysis.*
2. PICHLER, K. *Clinical Observations on Muscle and Skin Sensations. Roentgen Demonstration of Calcified Cysticerci.* (To be concluded.)
3. PFLANZ, E. *The Nature of Albuminuria and Cylindruria in the Use of Sulphate Waters.*
4. *UNGAR, K. *Case Contributions to Banti's Disease.*
5. FRAENKEL, A. *The Problem of Cancer.*
6. SOFER, L. *Social Medical Review.*

4. From a study of three cases of Banti's disease, which he reports, Ungar reaches the following conclusions:

(*a*) That Banti's disease is an independent clinical entity, whose primary cause lies in the gastro-intestinal canal, which at first expresses itself in enlargement of the spleen, with consecutive interstitial inflammation of the liver, with all its consequences, and produces a characteristic change of the blood.

(*b*) That syphilis, tuberculosis and alcoholism play no important part in the etiology of the disease.

(*c*) The third, or ascitic, stage, may last for more than a year.

(*d*) A cure of Banti's disease in the third stage, by extirpation of the spleen, has little probability, since the body retains only slight powers of resistance against infection of the peritoneum, lungs and so forth. [R. M. G.]

NO. 11. MARCH 16, 1911.

1. HECHT, V., AND KÖHLER, R. *Investigations on Asepsis.*
2. PFEIFFER, T., AND TRUNK, H. *Further Researches on the Influence of Ferments on Tuberculin.*
3. MAYER, O. *Affections of the Auditory Nerve in Acquired Lues.*
4. FREY, H. *The Occurrence of Diseases of the Internal Ear, in Early Stages of Syphilis.*
5. PICHLER, K. *Clinical Observations on Muscle and Skin Sensations. Roentgen Demonstrations of Calcified Cysticerci.* (Conclusion.)
6. BUM, A. *The Physical Education of Youth in High Schools.*

NO. 12. MARCH 23, 1911.

1. *NEUMANN, J., AND HERRMANN, E. *Biologic Studies of the Ovaries.*
2. FRÄNKEL, S. *Note on the Above Article of Drs. Neumann and Herrmann.*
3. LÖW, J. *The Question of Blood Formation in the Human Thymus.*
4. BACHRACH, R., AND NECKER, F. *Attempts at a Simplification of the Demonstration of Tubercle Bacilli in the Urine.*
5. RUBESCH, R. *The Drainage of the Abdominal Cavity with the Dreesmann Glass Drain.*
6. HERZ, M. *Can Acute Endocarditis appear Epidemically, and is such an Epidemic now Prevalent in Vienna?*

1. From a series of experimental studies on the internal ovarian secretion, the authors find that in women and bitches the lipoid content of the blood undergoes cyclic

variations, with a minimum at the time of menstruation and rut. Lipoidemia exists at climacteric and during the menopause, and is produced in women, bitches and rabbits by castration and by standardized Röntgen irradiation of the ovaries. Physiologic pregnancy is accompanied by lipoidemia and cholesterinesteremia. [R. M. G.]

No. 13. March 30, 1911.

1. Albrecht, H. *Pathogenesis and Prophylaxis of the Plague.*
2. *Franz, R. *Renal Decapsulation in Eclampsia.*
3. Salomon, H., and Saxl, P. *A Sulphur Reaction in the Urine of Cancerous Patients.*
4. Mantelli, C. *Investigations on the Physiology of the Stomach in Man.*
5. *So. *Does Atoxyl Influence the Formation of Antibodies?*
6. Knaur, R. *Preventive Treatment of Syphilis with Salvarsan.*
7. *Bucura, K. *The Temporary Sterilization of Woman.*
8. Alexander, G. *The Question of the Luetic Diseases of the Labyrinth and of the Auditory Nerve.*

2. Franz regards as indications for renal decapsulation in eclampsia the persistence, after delivery, of oliguria or anuria, of increasing albuminuria, or of convulsions or coma.

5. From a series of experiments with guinea-pigs, So concludes that atoxyl has no influence on the formation of antibodies in the blood.

7. Bucura reviews and approves the operation, suggested by Pestalozza and practiced by Taddei and Panà, of temporarily excluding the ovaries from the abdominal cavity by burying them in a peritoneal pocket. [R. M. G.]

Annales de l'Institut Pasteur.

March 25, 1911.

1. *Metchnikoff, E., and Besredka, A. *Researches on Experimental Typhoid Fever.*
2. Armand-Delille, P., and Launoy, L. *Study of the Stabilization of the Red Blood Corpuscles of Mammals (of the Sheep in Particular) in Very Dilute Solutions of Formalin.*
3. Chonkevitch, J. *Study of the Bacterial Flora of the Large Intestine of the Horse.* (To be continued).
4. Crendiropoulo. *The Mechanism of the Bordet-Gengou Reaction. The Rôle of the Antihemolysins of Sera.*

1. As a result of their experiences upon apes and monkeys, these authors conclude that it is possible to produce experimental typhoid fever. Of the animals used, only the anthropoids are susceptible to infection by mouth. In exceptional cases the lower monkeys are capable of becoming infected. Rodents and rabbits, however, are refractory towards this infection. The typhoid fever in the anthropoids is produced by the pure cultures of the bacillus of Eberth. It cannot be produced by the filtrate. These authors warn against confusing the peritonitis caused by intraperitoneal injection in rodents with a true typhoid fever. The protection by means of vaccines against this peritonitis does not suffice to protect against the experimental typhoid fever. [C. F., Jr.]

Il Policlinico.

April, 1911.

medical section.

1. *Sabella, P. *Congenital Malaria.*
2. Scordo, F. *Spontaneous Infection in Goats with Eberth's Bacillus.*
3. Scordo, F. *Experimental Infection with Paratyphoid Beta in Goats.*
4. Pontano, T. *An Experimental Contribution to the Knowledge of Nitrogen and Uric Acid Metabolism in Gout.*
5. Pezzi, C. *Bibliographical Note.*

1. Sabella reports two cases of malaria in pregnant women, one of whom died in a paroxysm, the other aborting at the fourth month. Careful post-mortem examination in each case failed to demonstrate malaria in the fetus. The author, therefore, doubts the transmissibility of the malarial parasite through the placenta. [L. D. C.]

## Miscellany.

### THE USE OF DIGIPURATUM IN HEART DISEASE.

Wm. F. Boos, L. H. Newburgh and H. K. Marks, in a paper published in the April issue of the *Archives of Internal Medicine*, discuss the great differences observed in the pharmacological strength of digitalis leaves and their preparations. The efficiency is said to depend greatly upon the soil, the gathering season, the method of collecting and drying the leaves and the methods used in preserving the dried product. For a time it seemed as if the pure active principles of digitalis would be reliable substitutes for the galenical preparations, but it was soon evident that neither digitalin nor digitoxin alone could produce the true digitalis effect obtainable from the leaf preparations. These facts show the need of leaf preparations of known strength. As the fluid preparations do not retain their original strength so readily, the dry standardized products are preferable. In digipuratum, a dry digitalis extract was found free from the harmful digitonin and 85% of the bulky and inactive matter. The drug is standardized by means of the frog experiment so as to be equal in strength to the equivalent amount of potent leaves, this strength being uniform.

Digipuratum was employed extensively by the authors in the medical services of the Massachusetts General Hospital. Eight cases are quoted and tabulated, showing interesting features. The diuresis was efficient in all cases and a marked effect on the pulse-rate was usually present. One case was sent to the hospital in a moribund condition but reacted very quickly to the drug, so that compensation was re-established in a week. The digipuratum was usually given in the form of treatments of twelve tablets each, and while in some cases the first treatment gave little or no results, the second was always very efficient. Good results may often be obtained by combining the medication with venesection, the removal of fluid by tapping or by combining the digipuratum with other drugs, such as diuretin or apocynum.

Digipuratum has now been used in the Massachusetts General Hospital for over a year and more than one hundred and eighty cases of primary heart disease or secondary cardiac involvement have been treated with it. The effect on the urinary output has been very prompt in most instances. There was not a single case of vomiting or diarrhea; in fact, the vomiting of a number of cardiac cases at entrance was promptly stopped by digipuratum. Cumulative poisoning was never observed. One of the early patients, a boy of sixteen, was given one hundred and six tablets in six weeks; at no time was there any suggestion of digitalis poisoning. In one or two instances, the house officers were made uneasy by sudden drops of forty or more beats in the pulse-rate, but no disagreeable consequences followed in any case. It must be remembered, naturally, that

digipuratum is a digitalis preparation, but the tendency to produce poisoning is much diminished so that it is possible by means of this drug of reliable strength to push digitalis therapy in a manner hitherto unknown.

## REPORT OF MASSACHUSETTS COMMISSION FOR THE BLIND.

THE fourth annual report of the Massachusetts Commission for the Blind, for the year ending Nov. 30, 1910, describes particularly the efforts made by the commission towards the prevention of blindness, and the work done in extending and elaborating the means and methods of industrial training for the blind. There are now in operation three schools for such training, and seven workshops, where the blind may obtain regular employment in useful manufactures at an adequate wage. In an appendix, edited by Miss Lucy Wright, the general superintendent, are considered the measures already adopted, and those which it is desired to obtain, for the prevention of blindness from industrial accidents, from phlyctenular keratitis, and from ophthalmia neonatorum. The report emphasizes two of the most prominent aspects of modern charitable relief, — prevention and restoration to capacity for work.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MAY 13, 1911.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | 1516 | 476 | Waltham | 10 | 1 |
| Chicago | 696 | 202 | Brookline | 4 | — |
| Philadelphia | — | — | Chicopee | 5 | 3 |
| St. Louis | — | — | Gloucester | 6 | 2 |
| Baltimore | — | — | Medford | 3 | — |
| Cleveland | — | — | North Adams | 2 | 2 |
| Buffalo | — | — | Northampton | 11 | 0 |
| Pittsburg | — | — | Beverly | 4 | 2 |
| Cincinnati | — | — | Revere | 6 | 1 |
| Milwaukee | — | — | Leominster | 1 | 1 |
| Washington | — | — | Attleboro | 4 | 1 |
| Providence | — | — | Westfield | 6 | 3 |
| Boston | 264 | 79 | Peabody | — | — |
| Worcester | 47 | 15 | Melrose | 5 | 0 |
| Fall River | 35 | 15 | Hyde Park | 5 | 0 |
| Lowell | 29 | 9 | Woburn | 1 | 0 |
| Cambridge | 35 | 12 | Newburyport | 5 | 1 |
| New Bedford | 26 | 13 | Gardner | 2 | — |
| Lynn | 27 | 6 | Marlboro | 6 | 0 |
| Springfield | 21 | — | Clinton | 6 | — |
| Lawrence | 25 | 9 | Milford | — | — |
| Somerville | 21 | 3 | Adams | 3 | 0 |
| Holyoke | 19 | 6 | Framingham | 4 | 1 |
| Brockton | 13 | 4 | Weymouth | — | — |
| Malden | 14 | 1 | Watertown | 5 | 2 |
| Haverhill | 10 | 3 | Southbridge | 2 | 1 |
| Salem | 18 | 6 | Plymouth | — | — |
| Newton | 10 | 1 | Webster | 6 | 4 |
| Fitchburg | 11 | 2 | Methuen | 3 | 2 |
| Taunton | 20 | 1 | Wakefield | — | — |
| Everett | 10 | 2 | Arlington | 4 | 1 |
| Quincy | — | — | Greenfield | 4 | 1 |
| Chelsea | 16 | 4 | Winthrop | 2 | — |
| Pittsfield | 10 | 3 | | | |

## RECENT DEATHS.

DR. BOCTEAU, an early French experimenter with the Roentgen ray, died last week at Le Mans, France, it is said from cancer due to exposure to x-rays.

DR. AUGUSTUS G. ELIOT, who died in Rostock, Germany, on May 13, was born in 1820 at Woodstock, N. Y. After graduating from Yale, he studied medicine and began the practice of his profession in New York City. He was a founder of the New York Academy of Medicine, and for many years visiting physician to the Bellevue Hospital. He was twice married, and is survived by his widow, by one son, also a physician, and by two daughters.

DR. WILLIAM APPLETON RUST, who died on May 15 at Brookline, Mass., was born in Gorham, Me., on June 22, 1823. He received the degree of M.D. from the University of the City of New York in 1846, and settled in the practice of medicine at Paris, Me. Coming to Boston in 1866, he entered the wholesale drug business, in which he continued for a number of years. During this time, he served as a trustee of the Boston City Hospital, and was a member of the Boston School Board. He is survived by three daughters and by one son.

DR. WILLIAM ROBERT ANTHONY WILSON, who died on May 14 at Pittsfield, Mass., was born in Washington, Ill., on Jan. 28, 1870, the son of a physician. He received the degree of A.B. from Williams College in 1892, and that of M.D. from the New York College of Physicians and Surgeons in 1895. For a few years he practiced medicine at Peoria, Ill., but, being obliged to retire on account of sickness, devoted himself to travel and to literary work. He is known as the author of several popular novels. He is survived by his widow.

## BOOKS AND PAMPHLETS RECEIVED.

St. Luke's Hospital Medical and Surgical Reports. Vol. II. 1910.

Testing the Efficiency of the Collateral Circulation as a Preliminary to the Occlusion of the Great Surgical Arteries. By Rudolph Matas, M.D. Reprint.

Annual Report of the Library Committee of the College of Physicians of Philadelphia. 1910.

Annual Address of the President of the College of Physicians of Philadelphia. By G. E. de Schweinitz, M.D.

Thromboses of the Heart and Blood Vessels, Thrombosis in Cardiac Disease. By Thomas E. Satterthwaite, M.D. Reprint.

Electrocardiograms and Their Significance. By Thomas Satterthwaite, M.D. Reprint.

Pennsylvania Health Bulletin. The Effect of Injections of Taurin upon Tumors of Mice and Dogs.

Pennsylvania Health Bulletin. Producers and Consumers.

The Gall Bladder and Biliary Tract an Available Therapeutic Route to the Upper Bowel. By Rudolph Matas, M.D. Reprint.

Occlusion of Large Surgical Arteries with Removable Metallic Bands to Test the Efficiency of the Collateral Circulation. By Rudolph Matas, M.D., and Carroll W. Allen, M.D. Reprint.

United States Naval Medical Bulletin. April, 1911.

The University of Oklahoma School of Pharmacy Quarterly Bulletin. March, 1911.

Chorea. By John Auld, M.D. Reprint.

Report of the Commissioner of Education for the Year ended June 30, 1910. Vol. II.

Practical Cystoscopy. By Paul M. Pilcher. W. B. Saunders Co. 1911.

An Introduction to Dermatology. By Norman Walker, M.D. Fifth edition. Wm. Wood & Co.

Modern Surgical Technique in its Relation to Operations and Wound-Treatment. By C. Yelverton Pearson, M.D. Wm. Wood & Co.

Clinical Symptomatology. By Alois Pick and Adolph Hecht. D. Appleton & Co.

A Manual of the Diseases of Infants and Children. By John Ruhräh, M.D. W. B. Saunders Co.

What to Eat and Why. By G. Carroll Smith. W. B. Saunders Co.

Fortieth Annual Report of the Trustees of the City Hospital of Worcester, Mass.

Massachusetts Commission for the Blind. Fourth annual report for the year ending Nov. 30, 1910.

Massachusetts Resources for the Blind. Bulletin No. 1.

The Use of Silver Wire for Fractures of the Patella in Thirty-Nine Consecutive Successful Cases. By Joseph E. Root, B.S., M.D., Hartford Conn. Reprint.

Public Health Reports, May 5, 1911. No. 18.

Public Health Reports, May 12, 1911. No. 19.

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## Original Articles.

# INFLAMMATION OF LONG BONES, WITH SPECIAL REFERENCE TO EXCISION OF THE DIAPHYSIS.*

BY ROBERT G. LE CONTE, M.D., PHILADELPHIA.

*Mr. President and Gentlemen:* I desire to express to you my deep appreciation of the honor you have done me in asking me to read a paper here this evening. You may not know it, but the surgeons of Philadelphia have always had the warmest admiration for the surgeons and the surgery of Boston, and among the many notable contributions that have been made here, your development of surgery in acute inflammation of long bones has been of the greatest interest and assistance to me. In 1868, Dr. David W. Cheever was the first in this country to remove the shaft of the tibia and see the bone regenerate. Twenty years later, Heyward W. Cushing demonstrated the proper time for the removal of necrotic shafts by repeated microscopical examination of the periosteum, and seven years ago Edward H. Nichols published his classical article on acute infectious osteomyelitis. These contributions led to the choice of my subject for this evening, and I desire to review with you the work of a small group of surgeons, the staff and assistants of the Pennsylvania Hospital during the past decade, and to consider only the acute suppurative inflammations of the long bones of the extremities, namely, clavicle, humerus, radius, ulna, femur, tibia and fibula. I have excluded the jaw, ribs and bones of the hand and foot, as the uncertainty of the causes of their involvement rendered them unsatisfactory for our purposes in this paper, but whatever may be said of the bones under consideration applies to all long bones.

Acute inflammation of bone begins either in the periosteum or the medulla, the two structures from which bone receives its blood supply. The inflammatory process is similar to that occurring in the soft tissues, but, owing to the unyielding character of the part, the classical symptoms of redness, swelling and heat are not perceptible at first, and pain is out of all proportion to the other symptoms. Also, owing to its unyielding nature, the exudate interferes more promptly with the circulation, and local death or necrosis takes place much more rapidly, through shutting off the blood supply to a certain area of the bone.

Anatomically, inflammation of bone is divided into periostitis, osteitis and myelitis, but clinically we never see an acute osteitis without involvement of the periosteum or the medulla. Also, periostitis is always linked with inflammation of the adjacent cortex, and myelitis with inflammation of the surrounding bone, so the terms osteoperiostitis and osteomyelitis are clinically correct. When not interfered with surgically, an acute suppurative osteoperiostitis will speedily involve the medullary cavity, and likewise an osteomyelitis will sooner or later spread to the periosteum.

Let us consider these two conditions as one group and afterward separately. First, however, I desire to make a note of explanation for the small number of cases I bring before you. Our patients at the Pennsylvania Hospital are of many nationalities and frequently speak only the language of their country. In the absence of an interpreter, we are limited to a few words in obtaining the history, or perhaps only to the sign language, and, even with the interpreter, the ignorance of the patient or accompanying relative may be so great that we can get nothing much beyond the condition that is obviously present. Our histories, therefore, are sometimes too inadequate to be of value for study, and this has eliminated a number of cases which otherwise would have proved interesting.

The whole group consists of sixty cases.

### Analysis of Sixty Cases of Acute Inflammation of Bone.

| | | |
|---|---|---|
| *Etiology:* | | |
| Contusions, wounds and foreign bodies, | 38 | =63%. |
| Infection: | | |
| Staphylococcus pyogenes aureus, | 12 | |
| Syphilis, | 6 | |
| Measles, | 1 | |
| Scarlet fever, | 1 | |
| Typhoid, | 2 | |
| Unknown organisms, | 4 | |
| Unknown causes, | 4 | |
| | 68 | |
| More than one cause, | 8 | |
| | 60 | |

| *Age:* | | Per cent. |
|---|---|---|
| Before the fifth year, | 8 | =13 |
| Between fifth and thirtieth years, | 50 | =83 |
| After thirtieth year, | 2 | = 3½ |
| | 60 | |

| *Sex:* | | Per cent. |
|---|---|---|
| Male, | 54 | =90 |
| Female, | 6 | =10 |

| *Bone involved:* | | Per cent. |
|---|---|---|
| Tibia, | 47 | =73.5 |
| Fibula, | 6 | = 9.4 |
| Humerus, | 6 | = 9.4 |
| Femur, | 3 | = 4.7 |
| Ulna, | 1 | = 1.6 |
| Clavicle, | 1 | = 1.6 |
| | 64 | |
| More than one bone involved, | 4 | |
| | 60 | |

The frequency in males, the time of life when the disease is most commonly met with, and the bones involved, all point to the importance of an injury as the predisposing cause in the development of the disease. That in practically 75% of the cases the tibia was involved must be due to the large surface it presents covered by skin alone, and the frequency with which young males bump their shins.

* Read before the Boston Medical Library, Feb. 15, 1911.

The injury is usually of a slight or moderate grade, perhaps at times so trivial that it has made no impression on the patient's mind, or he has forgotten it a few moments after it has occurred.

In the more severe injuries, like simple fracture, acute inflammation of bone rarely occurs. I can recall but a single case, a child with bow legs, that was subjected to a double osteotomy and developed measles on the fifth or sixth day after operation. Both tibias were involved, suppurated, and later sequestra were formed.

In compound fractures, when osteomyelitis occurs, drainage of the wound usually limits the damage to a small area in the bone, or the injury and inflammation of the soft parts is so great as to determine a speedy amputation.

There are perhaps two explanations to be offered for the apparent frequency of bone inflammation after slight traumas. First, in the severe lesions so much blood and so many leucocytes are poured out at the seat of injury that the invading germs are at once held in check or destroyed. Second, when we consider the great number of slight traumas which every youth receives before he attains manhood, and contrast them with the few cases of acute inflammation of bone, it is not hard to believe that the ratio is thousands of slight injuries to one case of acute inflammation, and only scores of grave injuries to one that will develop osteomyelitis. The truth, therefore, may be that after grave injuries, acute inflammation of bone is much more frequent than after slight injuries. The real determining factor in all these cases is the circulation of pus cocci in the blood. If these are not present, an injury cannot produce a suppurating lesion in the bone unless the cocci gain access to the part through a wound.

It is not always easy clinically to differentiate osteoperiostitis from osteomyelitis, as a few days after the onset of the disease both conditions are generally present, and the decision of the nomenclature is more or less arbitrary, based on the previous history of the case. What does matter, however, is the appreciation of whether the disease is localized to the cortex and periosteum or has involved the medullary cavity. It is, therefore, difficult to consider these cases under two groups, when the starting point of the disease, whether central or on the surface of the bone, is the basis of classification. No matter where the starting point, each merges into the other after a more or less definite period of time has elapsed in the acute, virulent cases. This period we have computed to be somewhere in the neighborhood of seventy-two hours, a little less, perhaps, in very virulent infections, a little more in the mild infections.

ACUTE SUPPURATIVE OSTEOPERIOSTITIS.

Number of cases, 41.
As the result of some form of trauma, 27 cases.
Infections without demonstrable injury, 14 cases.

| | Per cent. |
|---|---|
| Males, | 37=90 |
| Females, | 4=10 |

| *Bones involved:* | Per cent. |
|---|---|
| Tibia, | 32=70 |
| Fibula, | 5=11 |
| Humerus, | 5=11 |
| Femur, | 2= 4½ |
| Ulna, | 1= 2½ |
| | 45 |
| In which more than one bone was involved, | 4 |
| | 41 |

| *Age:* | |
|---|---|
| Before the fifth year, | 5 |
| After the thirtieth year, | 1 |
| Between the fifth and thirtieth years, | 35=85%. |

*Symptoms.* — Pain, local tenderness, swelling, redness, fluctuation, edema of the skin, with fever, and the constitutional symptoms of pus absorption, delirium, gastro-intestinal disturbances, etc. If the disease starts near a joint, there is frequently swelling of the joint, due to an increase of the synovial fluid. This is not of a septic nature and is rather a manifestation of the local hyperemia induced by the adjacent inflammation. When the subperiosteal pus is evacuated, the swelling of the joint subsides. The diagnosis is very easy in the superficial bones and more difficult in those well covered by muscle, but the x-ray at once clears up any doubt that may exist.

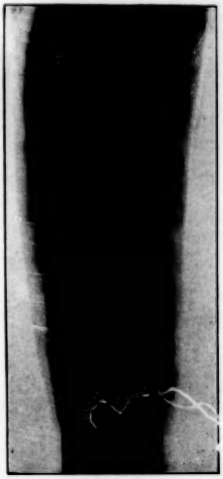
TERMINATION.

| | Per cent. |
|---|---|
| Resolution after superficial necrosis, | 14=34 |
| Resolution after local osteomyelitis, | 12=30 |
| Resolution after general osteomyelitis, | 10=24 |
| Deaths, | 5=12 |

Let us look at these terminations from the standpoint of *treatment*. Six cases are included in this group in syphilitics because they presented all the local and systemic symptoms of an acute osteoperiostitis and were probably due to a mixed infection. They were given iodides in addition to the local treatment, and all recovered after superficial necroses. Also 6 cases were operated upon within seventy-two hours from the onset of the disease. All were subjected to incision of the periosteum, disinfection and drainage. Five speedily recovered and one required a slight secondary operation for removal of superficial necrotic bone. In 7 cases shortly beyond the seventy-two hour period, the medullary cavity was opened and drained, 6 recovering without further operation, and 1 died. In 22 cases operated upon some time after the seventy-two hour period, in which the medullary cavity was not opened, all required the removal of more or less cortex, and in but 2 was the primary operation sufficient to insure healing. Four died and in the other 16 one or more subsequent operations were required, in 6 of which the entire shaft of the bone had to be excised. One remains in the hospital still unhealed. In 4 cases the medullary cavity was opened and found healthy and recovery ensued without medullary involvement. In the 5 deaths, staphylococcus pyogenes aureus was found in all,



No. 3. X-ray plate. Acute, localized osteoperiostitis of tibia. (*a*) Thickening and elevation of the periosteum. (*b*) Rarefaction of the cortex.



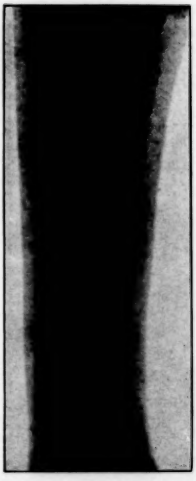
No. 10. X-ray plate. Diffuse osteomyelitis tibia, sub acute.



No. 8. X-ray plate. Localized osteomyelitis lower end femur. (*a*) Rarefaction of oval area in the medulla. (*b*) Enlargement of the diameter of the bone.



No. 13. Photograph. Entire diaphysis of tibia removed at operation four weeks after onset of disease.



No. 14. X-ray plate. Partial excision of the tibia. (*a*) Regeneration of bone three months after resection.



No. 25. X-ray plate. Regenerating bone eight weeks after resection of the shaft of the tibia for an acute osteomyelitis of one month's duration.



No. 15. X-ray plate. Same patient as Nos. 12 and 14. (a) Developed scarlet fever after Plate 14 and bone fracture during removal to Municipal Hospital. Firm union after two months.



No. 26. X-ray plate. Regenerated tibia thirteen years after complete subperiosteal resection for acute osteomyelitis.



No. 27. Photograph of the same patient, No. 26.



No. 29. X-ray plate. One year after excision of the upper three fourths of the humerus. Regenerated bone.

and while we do not underestimate the virulence of this organism, it would seem that the treatment was the most important factor in their fatal termination. All were diagnosed as osteoperiostitis; all were seen more than seventy-two hours after the onset of the disease, and in only 1, ninety-six hours after the onset, was the medullary cavity opened.

*Acute osteomyelitis.* — There were 19 cases in which this diagnosis was made, and they represent for the most part a more advanced stage of the inflammatory process than the preceding group. Many of them probably began as an acute osteoperiostitis, and through delay in treatment reached the more severe stage.

*Etiology.* — Traumatic in origin, 11; and where cultures were taken, 7 proved to be staphylococcus pyogenes aureus.

| | | |
|---|---|---|
| *Age:* | | |
| Before the fifth year, | 2 | |
| After the thirtieth year, | 1 | |
| Between the fifth and thirtieth year, | 16 | =84% |
| *Sex:* | | |
| Male, | 17 | |
| Female, | 2 | |
| *Bones involved:* | | |
| Tibia, | 15 | =80% |
| Clavicle, | 1 | |
| Humerus, | 1 | |
| Femur, | 1 | |
| Fibula, | 1 | |

The cases in this group presented themselves a week or more after the onset of symptoms. Three cases are included which properly do not belong here, as they were evidently chronic osteomyelitis. But as they came during an acute exacerbation, with systemic symptoms and foul discharge of pus, and in each the shaft of the tibia was excised, we have included them for the purposes of study.

*Symptoms.* — The symptoms were practically classical, as furnished in every textbook. Prodromes for the most part are slight or absent, although the patient may complain of exhaustion or malaise. This is quickly followed by pain, which is often accompanied by an introductory chill with high fever. The pain at first is vague, but soon focuses in the particular bone involved, and as a rule speedily becomes agonizing, and as its intensity increases, the tenderness increases and becomes exquisite. Redness and swelling soon appear in the virulent cases, and with it there is commonly a swelling of the neighboring joint. The involvement of the joint is primarily never purulent and it becomes so later as the result of delayed treatment, by extension from the primary suppurating focus. When edema, fluctuation of a periosteal abscess or loosening of the shaft from epiphysis occurs, any one of these signs is pathognomonic. Sometimes the disease is so rapid in its development, through the virulence of the infecting organism, that septicemia or pyemia shortly develops, and other bones may become involved. There is a high leucocytosis, averaging 18–20,000.

*Diagnosis.* — The disease for which this condition is most commonly mistaken is acute rheumatism. In acute rheumatism the swelling of the joint is coincident with the pain, and usually proportionate to the pain, and in but rare instances does the disease assume a septic type. The lesions of rheumatism are usually multiple; those of bone infection for the most part single. In rheumatism the pain starts in the joint; in acute osteomyelitis somewhere along the shaft of the bone. In acute osteomyelitis the disease assumes from the very onset a seriousness and gravity which is seldom if ever approached by acute inflammatory rheumatism. Rheumatism is never followed by suppuration, but valvular lesions of the heart commonly appear early in the disease. The importance of the diagnosis between these two conditions is at once apparent, for if adequate surgical measures are not promptly resorted to in acute osteomyelitis, the mortality from the disease is high, the destruction of bone great and the ultimate usefulness of the limb seriously compromised.

When all other signs fail, it will be safer for the patient if we consider every case of mon-articular swelling in children and young adults, with sudden onset and marked constitutional symptoms, as one of acute osteomyelitis until this diagnosis is confirmed or disproved by the x-ray. The diagnosis can be made much earlier by the x-ray in bones that are well covered by muscle.

In the inflammatory process of bone we find one of two pathological conditions taking place after the acute symptoms subside:

(1) An inflammatory process analogous to the formation of an abscess in the soft tissues, with an attempt by nature to isolate and cast off the dead tissue in the form of sequestra.

(2) A diffuse inflammation of the bone analogous to a cellulitis in the soft tissues, in which the greater part or the whole shaft of the bone is involved.

As the result of prompt and radical surgical intervention and a normal resistance of the individual to infection, localization of the inflammation may take place. If the process appears quiescent, it should not be disturbed for one or two months until the sequestrum may be felt free within the cavity. The cavity should be freely opened then, the sequestrum removed, together with the granulations lining the wall, and the cavity swabbed with pure carbolic acid and allowed to fill with granulations. If, however, the inflammatory process does not limit itself, involving more and more of the bone, a radical removal of the diseased tissue is indicated. In the above group of cases the mistake of not opening the medullary cavity at the primary operation was made in three, one of which died, and in the other two, sequestra were formed.

It is perhaps best that we transfer to this group 10 cases which were quoted under osteoperiostitis, and the 5 deaths, as in all of the 15 cases through delay or inefficient surgical treatment a diffuse osteomyelitis was present. These 15, when added to the 19 cases under this heading, make a group

of 34 for study. The 6 deaths, therefore, represent a mortality of 17.5%. In 16 cases in which incision of the periosteum, partial excision of the bone (i. e., any removal less than the complete circumference of the shaft), sequestrotomy or erasion were performed, 8 required one or more subsequent operations, 7 were unhealed, having a sinus remaining when they were discharged from the hospital, and only one healed after the primary operation. Twelve cases required extensive subperiosteal resection or complete excision of the shaft of the bone. Three of these total excisions were attempted after the disease had existed for over a year, and in 2 there was no regeneration of bone. The other case left the hospital six weeks after operation and it has been impossible to trace him and find out the ultimate result. None of the other 9 cases required further operative treatment, and the average period for complete healing and regeneration of bone was six months; the minimum time, two months; the maximum, one year.

Our practice in extensive subperiosteal resection or complete excision of the shaft differs somewhat in two particulars from the method advised by Nichols, namely, in the manner of treating the periosteum after the excision and in point of time when the excision should be done.

Nichols advises the disinfection of the periosteum, the sewing together of its cut edges, making a tube of it, and the closure of the soft parts over it, with a wick for drainage at each end of the incision. Our technic started with my first case, a boy of ten, in February, 1898, six years before Nichols' article appeared, and some time before Cushing's observations were printed, so that we did not have the advantage of their scientific work. In this case the entire shaft of the tibia was removed, the periosteum disinfected and the whole cavity of the wound packed with gauze, not a suture being used. The lower epiphysis was involved and required a subsequent second opening and curettage. The tibia was reproduced, practically like its fellow, and developed thereafter normally with the other limb, except for some shortening. This method having proved satisfactory, we continued to use it in our subsequent cases until Nichols' article appeared. Then we tried a case by his method, but whether through some fault of technic or other error, the case did not do well, suppuration was free, the chromicized catgut sutures gave way, the whole wound reopened and had to be packed, and eventually the bone was regenerated. Whatever our fault may have been, we do not know, so that we have gone back to packing without suture.

As to the time when the excision should be made. We agree with Nichols that the periosteum gives evidence of its maximum power of reproduction after the acute symptoms have subsided, somewhere toward the end of the second month, or beginning of the third month in the presence of a dead shaft, but we go a step farther and believe that it will do this at a very much earlier period if the necrotic tissue is removed. In any tissue where healing or regeneration of that tissue takes place in the presence of pus, we have a very considerable over-production, because a portion of the new material produced is destroyed by the infectious material present. In the presence, therefore, of a dead shaft or one that is bathing the reproductive surface of the periosteum with pus, the effort of the periosteum to reproduce bone is being constantly combated by the septic material present, and quite a portion of the material which it is reproducing is destroyed by the organisms. Therefore, the sooner the infective material is removed, the quicker will be the healing, which in this instance means the reproduction of the bone, and the less will be the task imposed upon the periosteum. Our aim, therefore, should be to get an aseptic periosteum at the earliest possible moment, no matter how little nor how much suppurating bone is removed at the primary operation.

Let us look at this question in another way. We get a case of acute inflammation of bone at the beginning of the fourth day. An opening is made into the medullary cavity as broad as a little finger and, say, two inches long. The case recovers without further operation because only a very small amount of bone has become involved. The drainage is adequate to prevent a further extension of the infection and the periosteum reproduces the defect of the removed bone. Take a case on the eighth or tenth day. Here we open a subperiosteal abscess, find the bone beneath soft, reddish and perhaps exuding pus. The medullary cavity is opened broad as a little finger, and this excision of bone is extended up and down the shaft until we reach healthy bone above and below and expose healthy marrow. For a time the acute symptoms disappear and the case looks convalescent, then sepsis reappears and another operation is necessary. Why? Because at the primary operation we were satisfied with adequately draining the medullary cavity as far as it was involved, and paid no attention to the inflammation that existed in the cortex. When the infection starts centrally and we attack a bone on its most superficial surface and find it infiltrated with pus, there is no reason why the opposite side should not be in precisely the same condition. Had the incision, therefore, extended around the circumference of the bone until healthy structure was encountered, the primary operation would be sufficient and the periosteum would fill in the defect. If, as we keep on removing the cortex of the bone, we find the whole circumference involved, why not resect the bone until we encounter healthy structure above and below? The periosteum just as surely will fill in the defect. In one case, a boy of ten, operated upon the tenth day after injury, and the fifth day after the initial chill, all of the lower third of the tibia was removed except a narrow strip one-eighth by three-fourths inch, which strip appeared healthy. The bone was reformed and the case completely healed in less than three months without subsequent operation. Two cases were operated upon at the end of four weeks,

the whole shaft being involved and removed, and healing took place in thirty-seven weeks. In one case operated upon at the end of the fourth week, the whole shaft being removed, there was partial regeneration at the end of thirty-six weeks, and complete when the child was again seen at the end of a year. Two cases were operated upon at the end of the fifth week, in which three fifths of the shaft was removed and the average period of healing was thirty-six weeks. One case of six weeks' duration, where the whole shaft was removed, was healed in thirty-six weeks. In these six cases, all of them done early, before the periosteum showed any sign of involucrum formation, the defect in the bone was completely regenerated and they required no subsequent operation after the shaft was removed. Also in all cases where more or less bone was excised short of a resection, the defect was promptly filled by periosteum. Many of these cases were treated with extension to combat muscular retraction and consequent shortening of the bone. It would, therefore, seem that there is no period too early in the disease for the periosteum to regenerate the defect in the bone removed. In the three other cases of regeneration, the operation was nine weeks, seventeen weeks and twenty-eight weeks after the onset of the disease, the latter, a child of two in which the clavicle was removed and healing was complete at the end of twelve weeks. Theoretically, it would seem probable that the younger the child, the more quickly regeneration would take place, but a contrasting of the ages of our patients with the duration of time needed for complete regeneration is totally unprofitable, for the conditions at the time of operation were so variable that no deductions of value can be drawn. In general, though, it would seem the older the patient, the larger the bone, the longer the time of regeneration.

If there is no time too early, there comes a time when it is too late for the periosteum to reproduce a shaft. It would seem that its energy at reproduction is expended, either from exhaustion in its effort at combating the disease, or its accomplishment of an involucrum so firmly adherent to the sequestrum that involucrum and shaft must be removed together. Under these conditions bone will seldom be regenerated, as instanced in 2 of the above cases, 1 a year and the other twelve years after the onset of the disease. The limit of time when the periosteum will cease to reproduce seems variable, but in the absence of an involucrum its power of regeneration seems to decrease progressively after six months, and where an involucrum is present and must be removed with the shaft of the bone, the power of reproduction was totally wanting in our cases.

The term "completely healed" means not only that all wounds and sinuses were closed, but also that the patient had the use of the limb, in the majority of the cases without any form of apparatus; in a few a light brace was still worn.

In reviewing these 60 cases as a whole, I think we can fairly draw the following conclusions:

(1) The mortality and extent of the necrosis following acute inflammation of bone depends not only upon the promptness of surgical interference, but also upon its thoroughness.

(2) That suppuration beneath the periosteum does not exclude an infection of the medulla, the presumption being that after three days the medullary cavity is also involved.

(3) That within seventy-two hours of the onset of the disease osteoperiostitis is localized usually in the cortex of the bone, and incision, disinfection and drainage are sufficient to bring about a cure. If there is no marked diminution of the symptoms in twenty-four hours after incision and drainage, the medullary cavity should be opened.

(4) When the medullary cavity is opened and found healthy, the dangers from infecting it are slight.

(5) In the majority of our cases osteomyelitis was due to a neglected osteoperiostitis.

(6) In operations after the third day, where systemic symptoms are pronounced, the medullary cavity should always be opened and the opening should be sufficiently long to expose healthy marrow, and sufficiently broad and long to expose healthy bone.

(7) Our mortality of 10% was directly due to delay in operation, and to inefficient surgery at the primary operation. In 5 of these cases I am sorry to say that the surgery was at fault, and had a radical operation been done I believe that all would have recovered. In the sixth case the delay in operation was perhaps more responsible than the surgery for its fatal termination. It is but fair to say that in collecting these 60 cases, perhaps 40 more were rejected for various reasons, none of whom died, so a mortality of 6% is nearer the truth.

Lastly, our surgery was bad, very bad in a number of cases, and the tendency to wait after giving drainage, to my mind, was not sound. I firmly believe that the attempt should be made in the acute stage to remove at the primary operation all bone that is diseased. We know that the periosteum in the acute stage of the disease will reproduce all bony defects, and delay means a greater number of operations, a greater destruction of bone, a greater likelihood of epiphyseal inflammation, a longer convalescence and perhaps a higher mortality. Twenty years ago we were satisfied in appendicitis with opening and draining a large abscess. To-day we say that some one has blundered when we receive a case in the abscess stage. I feel that the necessity of resecting twelve shafts in 60 cases, namely, 20%, is an error of this same sort, for if efficient surgery had been done early, the condition would not have arisen for such an extensive operation. As Nichols has pointed out, the resection of a whole shaft is but little less shocking to the patient than an amputation, and the operation has a very definite danger from hemorrhage, and in a few cases, on account of the hemorrhage, it has had to be done in two stages. My plea, therefore, is for

an early diagnosis, and, to continue the simile of the appendix, to abolish the Ochsner treatment of delay and to treat acute inflammation of bones as we would a similar inflammation in the soft tissues, as instanced in a carbuncle, by radical excisions at the primary operation.

## THE ACTION OF SALVARSAN UPON THE WASSERMANN REACTION.*

BY HOWARD FOX, M.D., NEW YORK.

DURING the past year there has certainly been an astonishing amount of investigation upon the clinical action of salvarsan. As a result we now have a fairly good idea as to what the new remedy can or cannot accomplish from a clinical standpoint. We know that the drug produces brilliant symptomatic results, and we also know that relapses occur with more or less frequency. From the proportion of such relapses we of course can form an opinion as to the permanence of the action of salvarsan in syphilis. To judge, however, of its effects in the latent stages of the disease it is necessary to depend upon successive Wassermann tests, carried out over a considerable period of time.

Although the literature of salvarsan is already very voluminous, it contains as yet comparatively few reports of value relating to the Wassermann reaction. The discrepancies in the various reports are very great and are due largely to the difference in the number and kind of injection and to the stage of the disease in which the injections were given. The percentage of negative reactions obtained by different observers vary from over 90% to 5% or even less, as shown in the following reports:

In 52 cases that were serologically followed for fifty days or more, Schreiber and Hoppe [1] found that the Wassermann reaction changed from a positive to a negative in 92.3%. In most of the cases the reaction became negative at the end of fourteen days. Neisser and Kuznitzky [2] found that the reaction changed in 44% of one hundred cases examined, occurring generally twenty to thirty days after injection. Of 27 cases reported by Isaac,[3] only one became negative. Nearly all remained positive in spite of the disappearance of clinical symptoms. In 27 cases of Braendle and Clingestein,[4] only one changed from positive to negative. Lange,[5] who examined Wechselmann's cases, reports that 57% of 268 cases became negative. In the strongly positive cases, the change occurred on an average from four to five weeks, while in the weak cases it took only eight days. Stern [6] gives 50% of negative reactions occurring in four to six weeks. MacRae,[7] who examined Fordyce's cases, obtained seven negative reactions in 54 cases. In 9 cases the reaction was modified. In 42 cases (males) reported by Lesser,[8] 15 became negative on an average of thirty-seven days. In 24 cases (females), only 2 became negative. Géronne [9] examined 193 cases and found that less than 50% became negative. Plaut [10] found two negative reactions in 41 cases after six to eight weeks. Scholtz, Salzberger and Beck [11] report twenty-one negative reactions in 80 cases. Pick [12] found that the change from positive to negative took place in the majority of his cases (138) in four weeks, the shortest time being twelve days and the longest seven weeks. In 27 cases of Loeb,[13] 12 became negative, of which 2 again became positive. Goldenberg and Kaliski [14] found that only 3 out of 39 cases became negative, of which 2 again became positive. Freund [15] obtained fourteen negative reactions in 43 cases. From an experience of 83 cases treated by the intravenous method, Favento [16] reports that the reaction remained positive in the majority of cases, although of a lessened intensity. In 54 cases followed by Von Marschalko,[17] a complete negative reaction was only obtained a few times. Swift [18] reports the result of 42 cases, some of whom had been treated by the intramuscular and others by the intravenous method. His results show an advantage on the side of the intramuscular method. He states (personal communication) that since the time of writing the disparity in favor of the intramuscular injection has lessened. In a splendid work involving great labor and care, Noguchi [19] and his assistant, Brenfonbrenner, examined quantitatively 102 cases at frequent intervals. The reaction became negative in 33.7% of their total cases. They found the best results to have followed the intravenous method of injection.

From the observations above quoted it can be seen how difficult it is at the present time to form a definite opinion as to the action of salvarsan upon the Wassermann reaction. In the majority of the reports the results were obtained by a single injection only of the drug, and mostly by the subcutaneous or intramuscular methods. In general the results of one injection cannot be said to be very satisfactory from the serological standpoint. According to Spiethoff,[20] the action on the Wassermann reaction of a single large or moderate dose of salvarsan given in any stage of syphilis by either subcutaneous or intramuscular methods is "entirely unsatisfactory." He obtained the best results by the Iversen method of giving an intravenous followed in a few days by an intramuscular injection. In addition to this he gave a second intravenous injection at the end of four weeks. The superiority of the Iversen method was shown not only clinically but also serologically, as during an observation period of four months, no relapses occurred.

In a valuable communication, Gutmann [21] describes the results of triple intravenous injections. In 27 cases he was able to follow the Wassermann reaction and found that in all except 2 cases it became entirely negative, even after the second injection. In 14 of these it changed in from two to six weeks. In 9 cases the reaction did not become negative until the third injection had been given. The two failures occurred in cases of late syphilis.

According to Fritz Lesser [22] the best results upon the Wassermann reaction are obtained by giving repeated intramuscular injections of one decigram. He finds that in the majority of cases the reaction becomes negative after the sixth injection. He does not state unfortunately just what percentage of his cases became negative, nor how frequently it was necessary to exceed six doses.

The action of salvarsan upon the Wassermann reaction is probably due to a lessening in the

* Read before the New York State Medical Society, April 18, 1911, in a symposium on Salvarsan.

amount of antibodies. That it is not due to any chemical change by which the serum is rendered more hemolytic has been shown by the experiments of Schwartz and Flemming.[23] The action is in general analogous to that of mercury. In a certain proportion of cases a positive reaction changes to a negative, generally about the sixth week, although the change may take place as early as the fourth day (Schrieber and Hoppe, Noguchi). In some of these cases the negative reaction later becomes positive. At times the positive reaction remains unchanged or for some

CASES TREATED WITH A SINGLE INJECTION.

| Case. | Stage.* | Lesions. | Kind of injection. | Before treatment. | After one week. | Two weeks. | Three weeks. | Four weeks. | Five weeks. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | iii | Flat papular. | Subcutaneous. | ++ | ++ | ++ | ++ | + | + | 8 weeks. <+ | 11 weeks. — | 4 months. <+ | 4½ months. ++ | 6 months. ++ |
| 2 | iii | Tuberculo-ulcerative. | ,, | ++ | ++ | | | | | 7 weeks. + | 10 weeks. + | 11 weeks. + | 4½ months. + | 6 months. ++ |
| 3 | iii | Gumma. | ,, | ++ | ++ | ++ | | | | 7 weeks. + | 10 weeks. + | | | 5½ months. ++ |
| 4 | ii | Papulo-squamous. | ,, | ++ | ++ | ++ | ++ | | | 6 weeks. — | 9 weeks. — | 15 weeks. — | | 5½ months. — |
| 5 | ii | Laryngitis. | Intramuscular. | ++ | ++ | ++ | | | + | 8 weeks. — | | 13 weeks. — | | 5 months. <<+ |
| 6 | iii | Tubercular. | ,, | ++ | ++ | | | ++ | | 8 weeks. <+ | | | | 5 months. ++ |
| 7 | iii | Gumma. | ,, | ++ | ++ | | | | | 6 weeks. + | | | | 10 weeks. <+ |
| 8 | iii | Tubercular. | ,, | ++ | ++ | | | ++ | | 6 weeks. ++ | | | | 4 months. ++ |
| 9 | iii | Gumma. | ,, | ++ | ++ | | | <+ | | | | | | |
| 10 | ii | Maculo-papular. | ,, | ++ | | | | — | | 6 weeks. — | | | | |
| 11 | ii | Latent. | ,, | + | | | | | — | | | | | |
| 12 | ii | Gumma. | ,, | + | | | | | | | | | | |
| 13 | ii | Mucous patches. | Intravenous. | + | | <+ | <<+ | | | | | | | 2 months. — |
| 14 | ii | Latent. | ,, | + | + | | — | | | | | | | |
| 15 | iii | Tubercular. | ,, | ++ | + | + | <<+ | ++ | | | | | | |
| 16 | ii | Miliary papular. | Intramuscular. | ++ | | <+ | | — | | | | | | |
| 17 | iii | Latent. | Intravenous. | <+ | | | | | | | | | | 2 months. <+ |
| 18 | iii | Gumma. | ,, | + | | | | | | 6 weeks. + | | | | |
| 19 | iii | Tubercular. | ,, | + | <+ | | | — | | | | | | |
| 20 | ii | Papulo-squamous. | Intramuscular. | + | | | | | — | | | | | |
| 21 | iii | Tuberculo-ulcerative. | Intravenous. | + | | | | + | | | | | | |
| 22 | i | Chancre. | Intramuscular. | ++ | | | | — | | | | | | |
| 23 | iii | Tuberculo-squamous. | ,, | ++ | | | | — | | | | | | |
| 24 | ii | Macular. | Intravenous. | ++ | — | | | | | | | | | |
| 25 | iii | Periostitis. | Intramuscular. | <+ | | | | <<+ | | 6 weeks. — | | | | |
| 26 | ii | Macular. | ,, | ++ | | <<+ | | | <<+ | 6 weeks. <<+ | | | | |
| 27 | iii | Recent hemiplegia. | Intravenous. | + | | ++ | | + | | | | | | |

*i = Primary. ii = Secondary. iii = Tertiary.

++ = Strong positive. + = Positive. <+ = Weak positive. <<+ = Faint positive.

CASES TREATED WITH TWO OR MORE INJECTIONS.

| Case. | Stage. | Lesions. | Kind of injection. | Before treatment. | After one week. | Two weeks. | Three weeks. | Four weeks. | Five weeks. | | | Total period under treatment. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 28 | ii | Pustulo-crustaceous malignant. | Intramuscular. | ++ | | ++ | | <+ | | 6 weeks. + | 8 weeks. ++ | |
| 28 | ii | Second injection. | ,, | | ++ | | ++ | ++ | | | | |
| 28 | ii | Third injection. | Intravenous. | | | ++ | <+ | | <<+ | | | |
| 28 | ii | Fourth injection. | Intramuscular. | | | | <+ | | | | | 6 months. <<+ |
| 29 | ii | Macular. | ,, | ++ | ++ | ++ | | ++ | | 10 weeks. + | 11 weeks. ++ | |
| 29 | ii | Second injection. | ,, | | | | + | | | 3 months. ++ | | 5½ months. ++ |
| 30 | ii | Papular. | ,, | ++ | ++ | ++ | ++ | + | + | 6 weeks. + | 9 weeks. — | |
| 30 | ii | Second injection. | Intravenous. | | | | + | | | | | 4 months. + |
| 31 | iii | Gummatous ulceration. | Intramuscular. | + | + | <+ | | | — | | | |
| 31 | iii | Second injection. | ,, | | | | | | — | 3 months. — | | 5 months. — |
| 32 | iii | Gummatous ulceration. | ,, | ++ | ++ | | | ++ | | 7 weeks. ++ | | |
| 32 | iii | ,, ,, | ,, | | + | | | | | | | 2½ months. + |
| 33 | ii | Flat papular. | ,, | + | <<+ | | | | <<+ | | | |
| 33 | ii | Second injection. | Intravenous. | | <<+ | | | <<+ | <<+ | 6 weeks. <<+ | | 2 months. <<+ |
| 34 | ii | Pustulo-crustaceous. | Intramuscular. | ++ | | | + | | <<+ | | | |
| 34 | ii | Second injection. | Intravenous. | | + | | + | | <+ | | | 4 months. + |

unknown reason can even become more strongly positive (Lange, Von Marchalko, Freund). The negative reaction may take place by a regular and gradual decrease in strength, or there may be at times marked oscillations, the reaction being one week positive and the next negative or vice versa. According to Herxheimer, such oscillations may be due to differences in absorption of the drug. In the table given by Zieler [26] such changes are shown in a marked degree. Finally the reaction may become entirely negative in the presence of a florid exanthem (Weiler [25]) and as in Case 24 of my table.

The action on the Wassermann reaction in the different stages of the disease is closely analogous to that of mercury. According to Heuck and Jaffé [28] the change from positive to negative is quickest in the primary stage, is slower in secondary and malignant syphilis and still slower in the tertiary stage and in syphilis hereditaria tarda.

It has been found by a number of observers (Géronne, Reiss and Krzysztalowicz [27]) that equally good serological results can be obtained with smaller as with the larger doses usually employed. The good results of Lesser with intramuscular injections of small doses have already been mentioned. Isaac [28] also states that when using large doses for intramuscular injections he obtained negative reactions rarely or only after long periods of time. When using small doses of one decigram, the reaction became negative in most cases after the sixth injection.

The effect upon the Wassermann reaction is very unfavorable compared to its effect upon the clinical symptoms. It is a common experience to see strong positive reactions continue for considerable periods of time in cases in which the clinical symptoms had disappeared with surprising rapidity.

The Wassermann reaction is finally not only of value in determining the permanence of the action of any antisyphilitic remedy, but is also of great importance in deciding whether the disease can be aborted by early treatment. Finger [29] reports favorable results of early treatment in 5 cases of primary syphilis. The cases were negative before treatment. The reaction in each case was negative before treatment and remained so for periods of twelve weeks to six months, during which time no secondary manifestations had appeared. Similar results are reported by other observers.

My personal experience is derived from about ninety injections of salvarsan given in conjunction with my colleague, Dr. William B. Trimble. Most of the work has been done in the service of my father, Dr. George Henry Fox, at the New York Skin and Cancer Hospital. With several exceptions I have only included in my table the cases in which the blood examinations were made during a period of five weeks or more. In over half of the cases the blood was tested at the end of two to six months. In all of the 34 cases in my table, the Wassermann reaction was positive before the injection. In 13 of the cases it became negative after treatment, at intervals varying from three to eleven weeks. Of these cases, 8 had been treated with a single intramuscular injection, 4 with a single intravenous injection, and one by a combination of the two methods. While this would seem to show an advantage on the side of the intramuscular method of injection, the number of cases is too small from which to draw any general conclusions. In a later communication I hope to have a more complete material and to give a detailed comparison of the clinical and serological results that have been obtained in our cases.

## CONCLUSIONS.

1. It is difficult at the present time to draw general conclusion owing to the great discrepancies in the results of various observers.

2. These discrepancies are partly due to the different methods of injection and to the different stage of the disease in which the injections were given.

3. The results of a single injection given by either the intravenous or intramuscular methods are as a rule rather unsatisfactory from the serological standpoint.

4. Repeated injections seem to have given better results and offer a more hopeful outlook for the future.

5. The action of salvarsan upon the Wassermann reaction is in general analogous to that of mercury.

6. The effect upon the Wassermann reaction is much less favorable than upon the clinical manifestations of syphilis.

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## THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS FROM THE STANDPOINT OF PHYSICAL AND FLUOROSCOPIC EXAMINATIONS.

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THE present paper, on the question of early diagnosis of tuberculosis, is the result of my personal observations on some hundreds of patients with positive and suspected signs of tuberculosis examined at the Boston Comsumptives' Hospital and the Boston City Hospital. I have closely followed the many suggestive symptoms of those patients who either from their family history or from their past or present history excited suspicion of some trouble in the lungs. I have unfortunately not been able to follow closely patients with very obscure symptoms and who are likely to develop more positive symptoms of tuberculosis later on. Many patients showed an utter disregard of their condition, which in some cases was serious. However, I fortunately met with success with some, all of whom were children, whose parents showed sufficient appreciation to make their visits at periodic times for examination and re-examination. And it is from these cases that I have obtained the most satisfactory results from my work. This paper may be of some especial interest from the fact that the diagnosis was at no time based on physical findings alone, but in all cases was borne out or modified by fluoroscopic examinations. The older methods and ideas concerning tuberculosis, which dealt mainly with the advanced class of cases — instructive undoubtedly to the student, but of no benefit to the patient —must necessarily give way to a more modern method of diagnosis by which the disease is detected in the early curable stage. The diagnosis of a case in which many of the well-known symptoms are clearly present (Cases Nos. 2 and 5) is not a difficult matter, but in the cases of those who have come for totally different reasons than for apparent tuberculosis, diagnosis of the chest is increasingly difficult. Very often patients visit the clinic because they fear that from association with tuberculous patients they have contracted the disease. Here is where care has to be taken in attempting either to detect the very earliest signs of the disease or to be willing to presume that any questionable change in percussion or auscultation means the gradual onset of tuberculosis. Patients as a rule did not care to be told that they were suffering from lung trouble, and most showed a surprising amount of sensitiveness and fear if told of the changes that were suspected in the lungs. Again, a great many of the earliest changes in inspiration or expiration or even in percussion may prove to be nothing but transitory bronchial trouble or a normal physiological condition of that patient (see Case No. 3). Again, changes may have occurred in the lungs and on examination may be obscured by other conditions present. I have seen a number of patients in whom distinct râles were obtained over apical areas of the lung and which proved to be a temporary affair. In many instances noticeable changes were found in percussing the lungs, and these changes, thought to be due to tuberculosis, often associated with some change in respiration, upon fluoroscopic examination proved to be illusory (see Case No. 3).

Extremes were often met with, for in two particular instances the patients gave an undoubted hostory of many hemorrhages. In the one case, the patient visited most of the hospitals and sanatoria, was treated for various periods of time without any positive diagnosis other than that based on the repeated hemorrhages. Upon physical examination very slight changes were found, and these only after several examinations. Even on x-ray examination nothing very positive could be obtained. The second patient was found in an advanced stage, which had evidently been progressing for twenty-six years (Case No. 2) and at no time was she incapacitated by her condition. On the other hand, patients with a definite history of night sweats, temperature, cough and expectoration on physical examination showed so small a change that the diagnosis was deferred, and only upon x-ray and fluoroscopic examinations did a positive diagnosis result (Case No. 4). In children especially do we find variations from the normal, and still so indefinite as to make the diagnosis of tuberculosis impossible. Surprisingly often we find that children whose parents are tuberculous are not brought in to be examined until they manifest a continual cough.

In a particular case I have in mind, the patient, a woman of forty years, had been suffering some time from tuberculosis. There were several children in the family, and although she was treated and warned as to her condition, and the danger of spreading the disease, she continued living in a small room and sleeping with the windows closed. No care or precaution was taken to have the children in different rooms. Some months later, upon very careful inquiry as to the condition of the children, it was found that one child had been coughing for two years and another for six months. The physical examination in both children showed tuberculosis.

Contrary to what I had expected, most of the patients examined were by birth American. The majority of the patients' (excepting children) occupations was "home"; a number had other indoor occupations, such as tailors, dressmakers, pressers, etc. These findings may, of course, be entirely due

to the vicinity of the hospital and the class of patients, or to the fact that the poorer classes are being treated by the tuberculosis clinics and societies.

By far the most interesting fact I obtained was the close connection or association of tuberculosis with other diseases. In children pneumonia seemed to be more than a predisposition to tuberculosis and pointed to a closer union between the two diseases, but if this is the conclusion in pneumonia, then pleurisy can be said to be a form of tuberculosis, for in the majority of cases patients had had pleurisy some time previously. So also in other forms of chest trouble, as bronchitis, influenza and pertussis. Arthritis in some form is believed to have some association with tuberculosis, but the number of cases was not large enough to draw any conclusions from them. However, in seven cases out of a hundred there was or had been arthritic trouble.

As to the symptoms or causes that compel patients to visit the clinic, they are numerous. The first is undoubtedly a cough which the patient may have had for an indefinite time. Surprisingly seldom, however, does the patient complain of cough with expectoration. Pain is a common symptom — pain in the shoulders or chest, front or back. Loss of weight with pallor and languor is also often a cause. Undoubtedly a good history of the symptoms of the patient will carry conviction to a diagnosis that is made upon questionable signs.

Family history (such as in Case No. 1), even if there happened to be no sign of tuberculosis, would naturally force extra care and examination of the patient. The routine examination of the patient, apart from his history, was the same in every case, so as to assure a uniform comparison of the cases. The physical development was noted, breathing both normal and deep, with and without chest expansion. The fossæ above and below the clavicles were compared, and often some intimation of trouble in the apices was shown.

The method of examining the patient was to seat him in a good light and then stand behind and look over and across the top of the shoulders, then upon deep breathing an idea was obtained as to the amount of expansion each apex had. The skin was felt and a note made as to whether it was dry, moist, soft or thick. A growth of hair on the back and arms was evident in a few cases which showed other typical illustrations of tuberculosis. The length of the eyelashes, the color in the cheeks, the brilliancy of the eye and many of the minor details were, as a matter of routine, taken note of.

*Fremitus.* — Tactile fremitus, whether increased or diminished, harsh or faint, has given the first inkling of trouble, next to percussion.

*Percussion* at all times must necessarily vary, and often becomes a question among physicians. Light percussion is what I practiced, and from which I obtained the best results. Dullness or resonance or even a normal sound may be obtained, but varying in the pitch over both lungs. Here, however, especially in children, the change may be purely physiological. In advanced cases, there can be no question, but it is to be borne in mind that we are dealing only with the early changes in tuberculosis.

In one case examined, the patient had pleurisy and three weeks later came to be examined. On the left side in front from the fifth rib downwards, and in the back on the same side from the mid-scapular downwards, there was dullness to flatness; the left apex, however, on account of the comparison, seemed perfectly resonant and of good quality, and in the right apex, a still better percussion note was obtained. On auscultation and further examination nothing very definite was obtained, only a suspicion of small trouble in the left apex. On fluoroscopic examination there was shown quite an advanced degree of density in the left apex, and a smaller process in the right apex. I quote this case as a proof of how easy it is to be led astray in comparing positive dullness and flatness to a lesser note elsewhere in the chest. And in examining many dozens of patients it is an easy matter to slur over those cases in which the grades of sounds are finely differentiated.

*Auscultation.* — First the normal breathing, the length of inspiration compared to expiration, the harshness or pitch of inspiration compared perhaps when the patient is breathing deeply, and a note made of any extraneous sounds that occur during breathing. If râles were present, then a note was made whether they were crackling, bubbling, dry or moist, coarse or fine, and whether persistent or transient. In auscultation we often obtain the very first change which is found in tuberculosis, and slight changes are of sufficient importance to draw extra attention to them. In children, especially, there is difficulty in diagnosing the numerous grades of sounds obtained during inspiration and expiration; in a number of cases examined, the very opposite results were obtained by fluoroscopic examination.

The weight, temperature and pulse were taken at each visit of the patient. The temperature is a good index of the patient's condition, and very often some idea is obtained of the amount of work or exertion undergone during the week. The pulse in most of the cases has averaged from 82 to 86 beats per minute. In early cases no such pulse or temperature is constantly obtained, although in both these points of observation there was sufficient increase noticed. The weight is of more importance after your diagnosis has been made, unless the patient's history gives loss of weight within a very short space of time, and then usually the case is more likely to be classed as an advanced process than as one of early tuberculosis. The shape of the chest has not given any information in regards to an early leaning toward tuberculosis. But chest expansion on the other hand certainly seems to be a point well to bear in mind; in the majority of positive cases, the expansion in adults hardly ever exceeded 4 cm. and averaged about $2\frac{1}{2}$ to $3\frac{1}{2}$ cm.

*Litten's* phenomenon appears to be of exceedingly small value. In only a very few cases was it obtained in such a way that a positive

measurement could be taken of the excursion of the diaphragm, and, on the other hand when obtained, never once did it correspond with the tracing obtained by fluoroscopic examination. In cases where one or the other side of the chest had a lesser degree of excursion, and when actual measurement was taken, never did it correspond with the fluoroscopic examination. And, more than that, very often there was actually a reversed order of things. The side which on physical examination showed the smallest amount of excursion had, on fluoroscopic examination, the greatest excursion. It is natural, then, to have but little faith in such an inaccurate phenomenon, especially when it is of such doubtful value. In one patient the excursion of the diaphragm on physical examination was 1¾ inches on the right and indefinite on the left side. This proved by the fluoroscope to be 2 inches on the left, and a fraction over 2 inches on the right. In another case a woman with Litten's sign seen exceptionally well, and which was thought to be a normal excursion for the individual, equal on both sides, showed by fluoroscope to be unequal and fully an inch more on either side. I quote Litten's phenomenon here because it was thought at first to be of value in the diagnosis of tuberculosis. *Excursion* at the bases proved of value in advanced cases only; usually, however, very little difference was obtained on actual measurement.

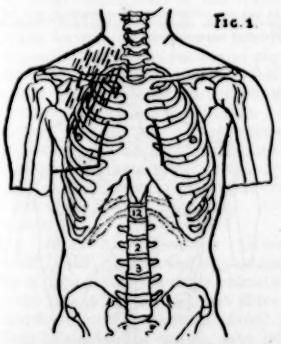
The cases I have quoted and those I present with this paper I have chosen more with the idea of comparison than to show typical cases illustrating changes found in early tuberculosis.

### Case No. 1.

Woman, age fifty-six, widow, housework, born at Cape Breton.

*Family history.* — Grandmother died of tuberculosis.

Fig. 1.



*Front and Back.* On right side, as shown by shading, slight dullness to fourth rib in front and to mid-scapular behind.
Tactile and vocal fremitus increased.
Inspiration rough, expiration slightly loud, but not definite broncho-vesicular character.
No râles.

Mother had tuberculosis. Son died at twenty-three years of tuberculosis, a year ago.

*Present illness.* — Nov. 14, 1906, complaint of general pains, and frequent micturition. Exertion leaves her weak. Headache, nausea. Some edema of ankles with pain. All else negative.

*Urine examination.* — Acid; specific gravity 1005.

*Weight.* — 125 lb.

Physical examination negative.

On Dec. 12, this history was obtained. Thirty-two years ago patient had severe attack of pleurisy on both sides; since then has been troubled with indigestion and severe pain over stomach. Pains gradually became worse. Twenty-two years ago pains very bad; a year afterwards had fainting spell, vomited "several quarts"? of blood, at first clots, then clear blood; few days later again vomited a great quantity of blood. Very sick for three months. Fairly well since then. Last winter pains came back, mostly in legs. Severe cough developed, with loss of appetite and weight. Some night sweats. Sputum thick, pus like, small in amount. During summer gained in weight and strength.

Physical examination of chest shows slight prominence of upper end of sternum. Both sides of chest expand equally.

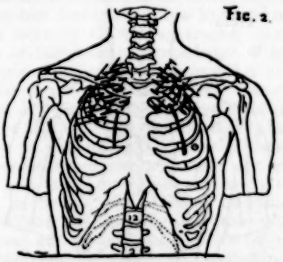
*Lungs.* — Negative save for slight dullness and increased tactile fremitus at apex right side front and back. Further lung examination gave the following results, which are best described by a diagram.

*Fluoroscope examination* shows both lungs to be very obscure. Ribs not seen.

### Case No. 2.

Woman, age thirty-eight, married, dressmaker, born in Sweden.

Fig. 2.



*Front.* Apical outlines diminished. Dullness as shown by shading on diagram. Breathing: On right, over dull area, bronchial; with coarse and fine crackling râles on left, broncho-vesicular breathing with râles as on right.
Fremitus increased at right apex.

*Family history.* — Father and mother had tuberculosis. Sister has tuberculosis. Mother had chronic cough and many hemorrhages.

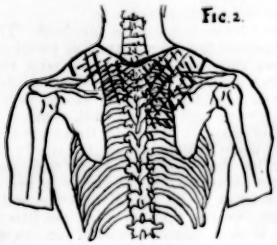
*Past history.* — Measles and scarlet fever as a child. Patient at twelve years of age treated in Sweden for tuberculosis. Coughed a great deal, expectoration mixed with blood. At seventeen years had anemia. At twenty years had attack of coughing with several hemorrhages, very sick. At twenty-eight years another attack accompanied by severe pain in chest and back, since then always raised good deal of phlegm. At thirty-two years had fourth attack with high temperature and night sweats. Arrived in America four years ago; stronger since, but has lost weight. One child born nineteen months ago, died two weeks ago of pneumonia. Has been troubled lately with small cough with some expectoration. Fever with night sweats.

*Present illness.* — Complains of cough and night sweats with hemoptysis. Loss of weight.

*Physical examination.* — Best illustrated by diagram. Temperature, 99.6.

*Fluoroscope examination.* — Shows a definite diffuse tubercular process.

FIG. 2.



*Back.* Apical outlines diminished.
Dullness as shown by shading on diagram. Breathing over dull area is of a bronchial type with many coarse and fine crackling râles, more marked in mid-scapular region.
Fremitus is increased.

CASE NO. 3.

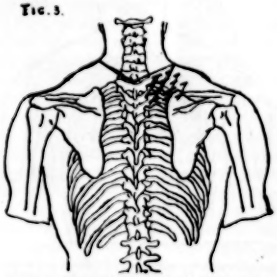
Male, age five and one-half years, attending school, born in Boston.

*Family history.* — Mother treated for tuberculosis.

*Past history.* — Has never been strong. A year ago had adenoids and tonsils removed. Pneumonia shortly after.

*Present illness* (Nov. 26, 1907). — Cough past nine weeks. Appetite poor. Constipated, bad breath.

FIG. 3.



*Apical outlines* (back) on right possibly slightly diminished. Dullness shown by shading. Breathing is broncho-vesicular. Fremitus is increased at both apices, but very definite on right.

(Dec. 12, 1907.) All last week very sick. Foul stools. High fever. In bed most of the time. Cough has increased; some days cough steadily. Some vomiting. No expectoration. Sweats every night profusely.

*Physical examination.* — Best shown by diagram. Temperature, 99.6; later, 99.0.

*Fluoroscope examination.* — Both lungs seem clear. Diaphragm possibly lower than normal. About the level of the third rib on right is a small dark area, possibly a gland, which is also shown in the radiograph.

CASE NO. 4.

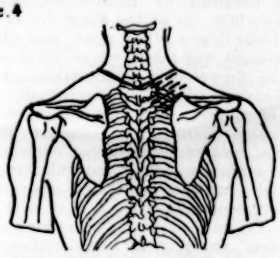
Girl, aged twenty-one years, house-girl, born in Nova Scotia.

*Family history.* — Sister had tuberculosis. Patient attended her during illness. Definite exposure.

*Past history.* — Measles, influenza.

*Present illness* (Nov. 26, 1907). — Six weeks ago lost her voice, last two weeks partially regained. Is considerably hoarse still. Cough, especially noticeable in morning, some expectoration. Easily tired. No loss of weight.

FIG. 4.



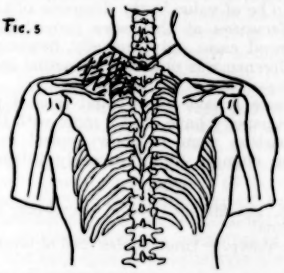
*Back.* Right apex: Dullness shown by shading. Breathing definitely prolonged and high pitched. Fremitus increased, especially whisper. No râles.
Excursion at bases equal and about one and one-half or two inches.

*Physical examination.* — Lungs affected. Temperature, 99.8°.

Diagram No. 4 illustrates the case. No tubercle bacilli found.

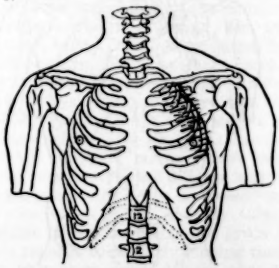
*X-ray report.* — Beginning tuberculosis at right apex.

FIG. 5.



*Back.* At left many coarse and fine snapping and bubbling râles with squeaks and grunts, chiefly with inspiration. Dullness shown by shading. Fremitus increased.

FIG. 6.



*Front.* Area of dullness shown by shading. Many coarse and fine snapping and bubbling râles. Squeaks and grunts chiefly with inspiration.

CASE NO. 5.

Girl, aged twelve years, school, born in Roxbury.

*Family history.* — Sister had pleurisy with effusion two years ago.

*Past history.* — Measles, pertussis.

*Present illness* (Dec. 14, 1907). — Coughing for two months, gradually getting worse. No expectoration. Night sweats. Chills. Dyspnea. Pain in left side. Breathes through mouth. Appetite poor. Subject to colds.

*Physical examination.* — Temperature, 99.6. Pulse, 84. Weight, 58 lb. Lungs affected. See chest diagram.

*Fluoroscope examination.* — Shadow in left upper quarter. Diaphragm lower on left side than on right. Excursion increased on right.

I wish to thank Dr. Francis H. Williams and Dr. Edwin A. Locke for the opportunity given me in making this study; also Dr. E. O. Otis for his valuable suggestions.

## THE NEUROLOGY OF APRAXIA.

BY GEORGE V. N. DEARBORN, M.D., CAMBRIDGE, MASS.

THE title chosen for this paper would be more properly "Suggestions toward the Probable Neurology of Apraxia," for in our relative ignorance as to the action mode of the brain no one may be quite certain of scarcely anything as yet relating to precise cerebral processes; much indeed hangs upon the nature of the nervous impulse. Does not Ramon y Cajal say under date of 1910 (Vol. II, p. 869, of his elaborate "Histologie"): "A dire vrai, il n'est pas possible, dans l'état actuel de nos connaissances, de formuler une théorie définitive du plan architectural et fonctionnel du cerveau"; and do not doctors as competent as Bastian and Ferrier diametrically disagree on nearly all essential matters concerned with the physiologic nature of the cortex? If one's suggestions, therefore, seemingly look forward and not backward, one need never be ashamed; and simplicity certainly we can never hope to find, but only the outline of the intricate plan.

In the usual discussions of the mechanism of voluntary movement (most of the actual research and thought have been classed as psychological), one of the most important factors of the complex neural process has been generally overlooked, namely, the spatial nexus in which all bodily action neurally considered has its rise. The more metaphysical discussions of movement have given it due consideration, but its physical basis in the organism has certainly been unduly ignored. It is to this as a factor in apraxia that the present writing intends to call attention. All apraxia includes ataxia!

As the writer has elsewhere (*Moto-Sensory Development*, 1910) in a general way suggested, observation of the development of voluntary movement in the infant during the first three years or so (a much-neglected medical field) indicates that power of deliberate action, save in the simplest innate movements of reaching and clasping with the fingers, develops *pari passu* with the conceptualization of space. This, we may not doubt, is much more than a coincidence. The infant is at first an all but reflex thing, moving under the stimulus of the inherent impulse to activity, and he becomes a free agent, personality, only as he becomes aware of the empirical three dimensions in which his body, like his wholly objective world, is constructed, and in terms of which alone initiative movement acquires meaning in any logical sense. In these terms alone to the finite mind is orientation or order; can any one, then, suppose that this universal ground of action is unrepresented in the integration of his will?

Physiologists more and more insistently are emphasizing the afferent or centripetal side of the motosensory circuits of the nervous system, as, indeed, our rapidly better appreciation of kinesthesia necessitates. For example, Wm. MacDougall, an English leader in the doctrine of muscle-action, in *Brain*, 1909, says, "The conception towards which the study of the organism as a whole points is that the neurones of the afferent side of the nervous system (including the cerebellum) constitute a great common reservoir of free energy, in which the head of pressure varies from moment to moment with the ratio of the inflow to the outflow, and on which all efferent pathways may draw in turn when they come into activity." So far as spatiality is concerned (surely in its relation to deliberate movement a case in point) the "reservoir" in the young infant's brain fills from many afferent sources indeed, and they, like other complex neural conditions, are beyond present exact detailing. Because he could not draw them wholly on the map, no one doubts that New England is covered with a network of railway tracks. Among the factors of this working knowledge of spatiality, however, in the evolving infant mind and therefore mechanized in the adult, are certainly these: A, the resident kinesthetic influences from the limbs moving so continually under the impulse to activity, and especially those coming from the joints, muscles, tendons, skin and bones of the arms and hands, pioneers in the evocation of the deliberate will. B, the kinesthesia from the extrinsic eye-muscles and from such other important and widespread muscles (of the neck, back, abdomen and even legs) as assist in directing the line of sight always on the (stereoscopically placed) foveæ centrales. C, the kinesthetic and special impressions integrating into equilibrium and coming from the semicircular canals, the eyes, and perhaps from the protopathic receptors of the abdominal viscera. D, in some way as yet hard to understand, the local signs of the surface and perhaps somewhat of the interior of the body, especially of the mouth cavity. E, the motor mechanisms of each of the senses so far as involving adaptive or adjustive muscular movements that afford awareness of direction or of space directly, for example the tongue, the retina being a conspicuous other example on the oldentime natavistic theory of spatiality. All these and probably other afferent influences gradually teach the baby that there is a *depth* for his deliberate exploration. A little later the kinesthesia from the locomotor mechanism, that of creeping, tumbling, walking, etc., enlarge and vigorously confirm the spatial concept thus in-

trinsically developed. Into the details of these various factors of original space-conception we need not even attempt to go, nor is it necessary to do so in order to be assured that their afferent impulses come from every portion of the body and directly or "symbolically" involve every portion of the brain. One need only consider how widespread is the visual "tract" through the hemisphere 'fore and 'aft; how expanded and how involved are the auditory centers if we include the essential vestibular functions; how spread-out and interknit are the taste-"centers," those of smell, of touch (shown by Van Biervliet recently to be a phase of kinesthesia), and of orientation, equilibrium and local signs. Such in the sketchiest of outline only is something of the brain-neurology, it may be, of the afferent intelligence that fuses into the fast-growing infant mind as a basal working knowledge of the space in which alone he can move and so have his being.

In proportion as the individual intimately knows this space as represented to him thus by the nervous system is he capable and skillful and efficient, master of himself and of his plastic invironment. In short, in the neural (and muscular) mechanism that develops originally a personality's notion of space we appear to have the foundation more or less of the neuromuscular mechanism of voluntary movement in its most obvious details and framework both at once, and what develops in the infant becomes the (often subconscious) determinant of the behavior of the adult.

Of course there is much more than this complex set of spatial neurograms that determines the co-ordination of the deliberate movements. Brain processes that represent concepts of objects (see below), of quality, of self-confidence, of interest, of relation of every kind, stand behind voluntary movement and these would be especially hard to localize in the cerebral cortex. There are furthermore relations to all kinds and degrees of emotional tones to be considered and innumerable and, in fact, indefinite connections with the intricate life's store of experiences.

> "Thoughts hardly to be packed
> Into a narrow act,
> Fancies that broke through language and escaped."

In short, the whole nameless and indefinable associated memory, conscious or subconscious, of the individual enters more or less, or may enter, into the immediate resolution of a deliberate action however trivial or important. All this means cerebral traces or cerebral action whose intricacy of pathway along the neurones no man can specify at present or even understand. The neurology of behavior in its sum involves all this and greatly more besides; motives and intentions, however well or ill-defined, could be really explained on certainly no simpler plan. Even if we may suppose some mode of simplification in the controlling neurogram of a simple voluntary act so far as the circuit around through the receptor, "motor center" and muscle is concerned, then even it would be, we may be sure, only a relative simplification, the work of "symbolic" knots of neurones that have undertaken familiar combinations in the course of years or centuries.

Besides all this, there must come out of the cortical maze, somewhere or at least somehow representing all this product of experience, the determination to make the movement at the time, perhaps the resultant of a host of afferent impluses from the relative periphery representing attentive effort. Lastly we may one day have to account for myriad intricate impulses that inhibit, — and this last presents a whole possible new field for neurologic search and research whose further boundary no one can as yet surmise and much less see.

Unless we cease to ignore the surpassingly complex determinants of voluntary behavior thus inadequately suggested we can in no wise even approach the solution of the neurologic problem. Here, as so often elsewhere, the first step to real explanation is appreciation of the intricacy of the conditions — and this the clinician too seldom stops to consider.

Apraxia has had various shades of meaning since Hughlings-Jackson first called attention to its interesting nature and the word later came into use, but at last there seems to be some general agreement to follow Liepmann's definition and to consider the condition "an incapacity for subjectively purposive movements of the limbs, with conservation of the power of movement." It is obvious that this conception is a broad and scientifically adequate idea notwithstanding its non-inclusion of voluntary movements other than those of the limbs; if one leave out of Liepmann's definition the words "of the limbs" the formula is exact and fundamental for all future discussion. Heilbronner's usage of the term includes various phases of the general condition but does not differ materially from this. On the other hand, the short and definite term "agnosia" for the failure to recognize objects has advantages that should make it regularly preferred (and used) to any expression that includes apraxis, for the two concepts are logically entirely distinct however close their alliance in clinical neurology. We discuss, then, in this essay in neurology, briefly as is fit, pure motor apraxia — a form of will-palsy basally unlike abulia.

Out of all the leading descriptions of apraxia (those, for example, of Liepmann, Bianchi, Heilbronner, Lewandowsky, Pick, Wilson, Coriat) two facts especially have eventuated — the reasonable probability of eupraxic "centers" in the two upper, especially the left, frontal lobes (above Broca's); and second, the frequent involvement of the corpus callosum in this particular form of will-defect. With the former proposition only are we here concerned, except in the general way allowed by our relatively scanty certain knowledge of the corpus callosum — to know which thoroughly would be to understand practically the whole of the cerebral cortex.

Many of the discussions of apraxia have clung perhaps somewhat too closely to the narrow clinical facts revealed by inadequate tests or to the still less informing conditions found in a few cases at the necropsy, thus ignoring generalities that are at once quite as certain and more instructive for general diagnostic use. As one may see from his above-quoted definition Liepmann has done better, for he discusses the condition on a basis that is not only clinical but thoroughly scientific and enlightening. It is then not only in the inability to use a few familiar objects, pencils and pocket-knives and the other things at hand on a physician's table, but it is likewise, and quite as importantly, in the patient's failure in voluntary movement generally involving no "use" of any thing outside the organism, that apraxia consists. In trying to extend his index finger outwards to touch the corner of a picture-frame on the wall a man may exhibit apraxia quite as well as in his ignorance of how to use a corkscrew or a thimble and yet the intended movement be apraxic and not merely ataxic. Indeed, for our present purpose, all voluntary movements or acts may be classed under two wholly arbitrary heads, namely, those that involve the using of objects whose use has been recognized, and those involving the use or practice of another object of consciousness whose basal nature the whole mechanism of efficiency recognizes, namely, *space*. Every voluntary act includes the use of this (universal?) spatial object, while only a relatively few base their co-ordination, following recognition, on material objects.

As the by-product of an apparatus — research under way in a somewhat different direction, it has recently been strongly impressed upon the writer how little the imagery experienced just before or during a careful voluntary movement has to do with the voluntary control as a performance in space with definite direction, speed, extent and force. Introspective reports in connection with exact objective records have made this matter distinct. Notwithstanding an essential identity of performance, the introspective experiences varied widely — the imagery of no two were alike. Kirkpatrick, Woodworth, Stout, Bair, Judd and many others before them as well as since have discussed imagery almost indefinitely, forgetful that consciousness, never lapsing, has to have some content, forgetful, too, as it seems, how competent a machine is the mechanism of human efficiency. No one in these days when psychologists, even, are beginning to understand what the subconscious is, should thus ignore the basal consideration that in the first years of life voluntary control became a well-developed psychomotor system competent to perform all ordinary movements, not new, with only symbolic control from centers working subconsciously whose function it is thus to direct familiar expressions of individual intention. The "reservoir" of afferent influences attends to the motivity of this, and consciousness only "says the word." The precise "imagery" that is attendant on a voluntary movement seems to have little effect on the accuracy of the movement save as it detracts from or increases the attention-effort exerted by the psychomotor (eupraxic plus the Rolandic?) centers on the musculature, on the particular action system in use at each moment. Out of the maze of brain and cord and sympathetic the deliberate will chooses for itself a pathway always complex and intricate. Physiologically the will is "viatility," but none the less human or divine on that account.[1]

Save in new and hence really difficult movements, much of the nerve-control apparently has been assumed by psychomotor-complex neurograms perhaps of the frontal lobes efferenting by way of the central convolutions, but, however, in a way the normal adult knows little of so far as direct experience goes. If, on the other hand, the motor idea of the action be intently conscious (as is always the case in really new co-ordinations) the attention is largely in terms of spatial relationship plus a more or less accidental and unimportant fusion of visual sensations; resident kinesthesia; ill-defined consciousness of effort or strains; and extraneous sense-impressions of many possible kinds. There is evidence that the resident kinesthesia may mean much in the acquirement of new and difficult control just as there is evidence likewise that in the average seeing person doing familiar things it means usually nothing at all for consciousness. In the blind the foundation space-consciousness is certainly much more definite and distinct than in normal individuals, as is also their resident kinesthesia (called by them touch). The relative inaccuracy of voluntary movement in the blind is not hard to understand when we consider the relative paucity, inevitable and great, of their eupraxic centers, products largely of experiences that they cannot have had.

The early elaboration of human behavior into very numerous psychomotor complexes on a basis of economy and habit devolves especially, we may reasonably presume, on two important portions of the brain (connected intimately, however, with all the rest) — the frontal lobes (via the central) and the cerebellum. If we know anything at all of the frontal cortex it is that one at least of its duties is this elaboration of motor ideas, how to use objects, for example, or how to rotate the arm or roll a shot between the fingers. These centers have in early years elaborated many such psychomotor complexes, have interrelated them, and have put them in bewildering intimacy with all the other centers in the brain and below it. Broca's convolution furnishes what is probably by far the most complex example of an eupraxic center, and its function is just the elaboration, interrelation, and extra-relation of a certain set of objects, namely, words. These, spoken, written, printed, graven, depicted, sculptured or materialized by the sign-manual constitute the physical basis, so to say, of the one uniquely human process of language-formation

[1] Some of the possible details of this neuromuscular process especially in the cord have been recently discussed by the writer in an essay on Attention in the *American Physical Education Review*, for November and December, 1910, and January, February and March, 1911.

and language-expression. Need one try to imagine the details of Max Mueller's speech-center in terms of neuraxones, dendrites, nerve-cells, or of ions and osmosis and reversing colloids? Yet this must be done some time and by some one or else all our fashionable localization be given up.

In a way quite homologous to this, every common object other than words must have representation in the frontal cortex, we may assume. If then a man does not know how to use a sextant or an eidograph or a planimeter, or a pencil or a pair of shears, it is so only because his frontal cortex has never acquired or, from disease, has lost that particular psychomotor complex. No more can be taken out than has been put in. As has been often well pointed out, the newborn child is almost wholly apraxic, although even then something in his mechanism of efficiency represents the use of his mother's breast just as it represents and provides the means of finding it in space. The cleverest adult obviously is he who has in his frontal cortex the greatest number and the greatest perfection of detail and relationship of these motor ideas (neurograms) of movements of utility.

Voluntary movements of the other of the two suggested classes, those not involving the use of particular material objects, employ a center commensurate in elaboration and universality of use with the "object" that they do employ, namely, space. The first part of this paper has tried to briefly suggest how manifold and complex and withal how fundamental is this spatial ground of all our neurally controlled behavior; we make our space and cannot move outside of it. We have already mentioned the most important of the factors that fuse into our voluntary development and give us the basis of our deliberate activity. The "center" of this voluntary nexus of movement is undoubtedly in some manner the cerebellum under the continual control of supranuclear influence. To leave the cerebellum out of any discussion of the neurology of apraxia is to dehamletize, so to say, the text, for without this all-related center voluntary movement has no principle of action, no rule of conduct. It needs only a drunken man reeling home or other afferent ataxia to demonstrate the proposition. We can almost, then, speak of the cerebellum as the space center, at the physiologic foundation of all voluntary movement, its "immanent idea."

Through the ipselateral pons each frontal lobe is in close connection with the contralateral lobe of the cerebellum. We may, therefore, be reasonably sure that the so-called eupraxic centers of the frontal cortex receive therefrom continually the nervous co-ordinations by which alone they can control the movements made in using objects. It is in making this connection between the hind-brain and the fore-brain that lesions of the corpus callosum may be involved in apraxia, as has recently appeared to be sometimes the case, for thus the space-co-ordinations of the contralateral lobe of the cerebellum might be cut off from the eupraxic centers, — for example, those coming from the right cerebellum to the left frontal lobes. This is the more important because lesions in the latter region have recently been found coincident with apraxia oftener than any where else.

It is difficult, however, to accept one suggestion made in current apraxic discussions, that, namely, of a single dominant center of eupraxia controlling all the rest. By the logical nature of use, unique for each kind of object, this idea seems to be untenable. If such a center be postulated, its most likely position would be in the Rolandic region where the general psychomotor co-ordinations of voluntary action are commonly supposed to arise. To cite Broca's center as an homologous instance of dominancy were to ignore the unequalled complexity of language and of language-expression. This center, if for convenience the term be retained for it, is in reality a large and intricate region of interwoven neurones out of all comparison with the requirements of a center that may be thought of as dominating numerous other centers each with co-ordinating duties of its own. In some such way as this altogether, the nature of the observed administration of the voluntary movements said to be defective in the clinical histories of actual apraxias may perhaps be tentatively better understood.

In many voluntary movements, then, spatiality seems to constitute the neural motor idea necessary for their co-ordination and muscular accompaniment, but in the movement of using an object space may be oftentimes only of secondary importance, although, we may presume, always underlying the cortical associations in its influence on the actual innervations. When the clinical observation of apraxia is regularly extended to cases or aspects presenting apraxic movements other than those concerning the use of small familiar objects, it can hardly be doubted that this important relationship of space-conditions will promptly appear.

The importance of the neurology of apraxia, as set forth by all recent writers, in relation to the baffling educational problem of ambidexterity presents itself for consideration, and the problem itself urges solution by comprehensive experimental methods.

## ACCURATE OPTICS.

BY ISAAC HARTSHORNE, M.D., POUGHKEEPSIE, N. Y.

EXISTING inaccuracy in optical production and the failure on the part of many oculists to recognize the same. — Trial lenses. — Prescriptions inaccurately filled. — Opticians and oculists both to blame, especially the oculists, since the responsibility to the patient is theirs. — Absolute accuracy can be obtained when demanded and the finished lens properly inspected by the oculist. — The commercial element. — The remedy is for oculists to verify the claims of accuracy of optical houses.

THE progress of medicine and surgery during the past thirty years has been so tremendous and so revolutionary that it must be difficult for most medical men of to-day to realize what it meant to practice medicine and surgery in and before the eighties. Suffice it to say that surgery is now aseptic instead of septic; diphtheria, smallpox and yellow fever have none of their former whole-

sale raids; tuberculosis is on the wane; and puerperal fever is considered practically mal-practice. Not one of these changes for the better was accomplished without a struggle, and at each progressive step some branch of medicine and surgery has had to clean house and start again. At the present time, the Council on Pharmacy and Chemistry is giving us a continuous performance of drug frauds, both in the line of proprietary medicines and also in the line of variations in strength of products put on the market by reputable chemical manufacturers.

There exists to-day in the world of optical production a condition calling for housecleaning and revolution just as strongly as any call issued in the past for better medicine and surgery. It is a condition calling for action along the same lines as the exposures by the Council on Pharmacy and Chemistry of errors in strength of drugs put out by reputable drug houses. It is, in short, a condition of inaccuracy in the products of many optical houses and many opticians and the failure on the part of many oculists to recognize these inaccuracies when they exist.

Let us begin with trial lenses. Cases of trial lenses are put out by optical houses at a cost of $35.00 and up. Several opticians have admitted to me that these cases are made in a hurry and are "probably not perfectly correct." I know of several oculists who have taken the trouble to go over their trial lenses carefully to determine their accuracy, and have found them anywhere from 10 to 50% wrong. Some of these cases were special orders and some stock cases. A year ago I ordered from a leading optical house a set of trial lenses made according to my own specifications and no price was named until the case was completed. The chief specification was that the case was to be absolutely accurate, both in strength of lenses and in the marking of the axes of the cylinders. The case was delivered in six months, cost about three times as much as an ordinary one, and was pronounced by the company as absolutely perfect. As to the accuracy of strength, only one lens failed to neutralize as it should do; but out of 208 cylinders, 34 were wrongly marked, that is, nearly 17% were wrong. Some of these errors were between 2 and 5° and two as high as 15°. In some of them the axes were marked on the true axis of the cylinder, but the marks did not run through the diameter of the circle, that is, the marks were not 180° apart. I believe this company intended to give me a perfect case and I have so expressed myself to them, and I believe that when this case left the factory it was above the average in accuracy.

To quote from "Current Comment"[1]: "The question arises: if a firm is careless enough to make incorrect statements to the Council on Pharmacy and Chemistry which it knows will critically examine the claims, what degree of 'carelessness' may be expected when the products are exploited direct to the physicians?" A similar question: if one of the best optical firms in the country puts out a case of trial lenses at three times the usual price and pronounces them absolutely perfect, knowing that this case will be carefully inspected as to its accuracy, and after such inspection the cylinders in that case are found to be nearly 17% wrong, what degree of accuracy may be expected in cheaper cases which are admitted to be inaccurate because of hurried preparation?

Oculists who use a mechanical axis finder and centering machine will admit that it is common to see patients wearing lenses that do not agree with their prescriptions, and in some cases in which I have been unable to see the former prescription I am quite ready to believe that the oculist did not prescribe the glass that is being worn. For example, to cite one case among many: A patient came to me from an eminent oculist, who, by the way, has no mechanical axis finder or centering machine, and she was wearing two pairs of glasses, distance and reading; the axes of the distance lenses were both exactly 86° and both lenses were decentered; the axes of the reading glasses were 80° and 90°, and each lense was so decentered that she also had a 1° prism base out in each eye. Since I found her axes 85° and 90° and she had orthophoria with the proper correction, I could not believe that the former glasses were as prescribed. The oculist had seen these glasses and had told her they were all right. If he had had such a device as above mentioned he could have discovered readily the several errors, and the success would have been his instead of mine. I also happen to know that this oculist's lenses are ground by a New York City firm which boasts of the accuracy of its productions.

A few months ago, while talking with the head of the most accurate optical house in New York City, he said to me, "When an oculist like Dr. Wm. M. Richards, of New York City, who is supposed to know little or nothing of the actual mechanics of lens grinding, can show us, who have been in the business for years, where we are making mistakes, it is high time for us to learn new methods." That house is now producing accurate work, at least to those oculists who demand accuracy and who use in their own offices axis finders and centering machines to check up the optician's work. When I began to demand accurate optical work in this locality my own optician, who has always been anxious to help and to please, found himself in the same fix as the New York firm, and had to learn some things over again. In a number of cases he has had to regrind one or both lenses, and in one case he ground six pairs of lenses before he got one pair that he said he knew I would accept, and he added frankly that any one of the six ordinarily would have passed, and yet only the last pair were ground accurately. I had difficulty with the New York firm referred to until they learned that the lens might as well be right first as last.

It is very easy to say the opticians are to blame for all this and should be treated accordingly. There is, however, a good deal to be said on their side which throws back considerable blame on the

[1] Jour. Am. Med. Asso., Feb. 11, 1911, p. 427.

oculists. If oculists were prepared to demand accurate optical work, and to determine its accuracy, in their own offices, in the form of the finished product, a great deal of this inaccuracy would disappear. By the use of an up-to-date axis finder and centering machine, accurate optical work,— and by "accurate" I mean not simply the correct strength of spheres and cylinders, but also exactly the correct axes of cylinders and the centering of lenses so that the optical center rather than the mechanical center can be placed in front of the pupil of the patient's eye,— is not simply possible, but should be absolutely required. It has been frequently demonstrated that when such accurate work is demanded it can be obtained, and when it is not demanded and the finished lens tested by the oculist it often is not obtained. Many oculists do test the strength of the lenses by neutralizing them with their own trial lenses, — which may or may not have been corrected, — guess at the axes of the cylinders within 15°, and pay no attention to the optical center of the lens. Such men often get the axes 5 and 10° or more in error of their own prescription, and also give prisms from decentered lenses, because the optician knows that they pay little attention to the real axis and optical center. Yet these same men admit the necessity of having the axis of astigmatism properly corrected and spend valuable time in trying to find that axis as nearly as possible.

Such being the situation, it would seem that a good deal of blame should be on the oculists themselves in not demanding accurate work and in not proving the claims of accuracy made by optical houses. The prescription is given by the oculist, and the oculist is responsible to the patient to have that prescription correctly filled. If, as in the case of lenses where the accuracy of the product is so easily determined, the prescription is not filled as accurately as the best and most modern methods make possible, the patient is being defrauded, in that he is not getting his full value from the prescription, and he is still further defrauded in that a wrong glass is more likely to do harm than good.

Furthermore, the commercial element comes in very strongly. If we want a first-class article we have to pay for it, and the oculist who tries to make optical houses cut prices to the lowest possible level will get a degree of accuracy commensurate with the price paid. The custom of commission between optician and oculist should be condemned even more severely than between general practitioner and surgeon. The optician is a merchant and as such desires to please the oculist, but does not feel called upon to provide an article any better than the oculist demands, and those oculists who are satisfied with inferior work will never get accurate work done by any optical house or optician, and in consequence the patient is the one who suffers. Since general practitioners are daily sending patients to oculists for refraction, they should demand accurate work from the oculists just as the latter should from the opticians.

The remedy is simple but decisive. Every oculist should require his optician and optical house to use an up-to-date centering machine and axis finder and he should have the same device in his own office. Every oculist should correct, or have corrected, his own trial lenses, both as to neutralization and as to axis marks. That is, the axis marks should run through or parallel to the axis of the cylinder and also through the diameter of the circle, and so be exactly 180° apart. I consider it absolutely essential to remove all cylinders below + 0.75 and — 1.00 from their frames in order to mark their axes correctly, since in my own case most of the low cylinders that were found to be wrong after removal from the frames had appeared to be all right while in the frames. No oculist should permit any patient to wear his prescription until the lenses have been checked in detail in the oculist's office and replaced if found wrong in any particular. Still greater perfection will be reached if the oculist follows the suggestions outlined in "Perfect Optical Work."[2] It is to be remembered that none of us are infallible and that even with a machine at the factory and also in the optician's shop a careful oculist will still at times find errors by his office machine.

We all refuse to accept the conclusion of a board of health that because a city's water supply goes through a sand filter the drinking water of that city must be free from harmful bacteria, but absolutely demand frequent bacterial counts to demonstrate how well that filter works and the actual condition of that particular water supply. As long as oculists permit opticians to pull the wool over their eyes by saying that a lens or a set of lenses do not need inspection, but must be correct since they were turned out by an optical house of good reputation, just so long will the opticians be satisfied with inaccurate work and the oculists continue to get the blame justly due them for conditions now existing. There will be no improvement in the work of any one oculist until he is willing to recognize his responsibility toward his patients and become in himself a Council on Lens Inspection and check up every lens which he uses in his office or for which he writes a prescription.

The necessity of accuracy in optical production will be admitted by all who have done sufficiently accurate work to know the advantages to the patient of good work over bad. That absolutely accurate work cannot be obtained without the use of a modern axis finder and centering machine will be admitted by all who have used such a machine. The frequency of inaccuracy and the truth of the above statements can be demonstrated readily by a careful examination with an axis finder and centering machine of a couple of dozen of lenses containing cylinders selected at random. Is it not, therefore, high time for the refraction branch of ophthalmology to clean house, to remove the stigma of inaccuracy and to start a new era of accurate optics? It is for the oculist to decide.

[2] Ann. Ophthalmol., April, 1910.

# Reports of Societies.

## AMERICAN GASTRO-ENTEROLOGICAL ASSOCIATION.

FOURTEENTH ANNUAL MEETING, HELD AT THE BELLEVUE-STRATFORD HOTEL, PHILADELPHIA, PA., WEDNESDAY AND THURSDAY, APRIL 19 AND 20, 1911.

(Concluded from No. 21, p. 758.)

### FURTHER EXPERIENCES WITH THE X-RAY DIAGNOSIS OF ULCERS OF THE STOMACH AND DUODENUM, EMBRACING FIFTY CASES; LANTERN-SLIDE DEMONSTRATION.

DRS. HENRY ADLER and HOWARD S. ASHBURY, Baltimore, presented this paper, which was read by Dr. Adler, who said that from a study of these cases, the following conclusions seemed to be justified:

(1) The retention of bismuth given according to our method for a period of over four hours signifies a pathological condition other than mere displacement.

(2) The absence of a bismuth shadow from the stomach area examined in small isolated spots is not due to stenosis or simple dilatation, but to ulcer.

(3) While we believe that a distinct effect has been made in ulcer diganosis, a valuable sign has been developed, which, when present, will justify us in carrying out our treatment with assurance in otherwise doubtful cases; yet we feel that the x-ray examination should not at present be looked upon as giving by itself a final verdict, but rather should bear weighty evidence when taken in combination with the other clinical data.

The x-ray examination having shown a definite ulcer-shadow before treatment is instituted, its persistence or absence in later radiograms after the treatment should be an index of the result of such treatment. Some work has been done on this line, but our experience is too young to report data of value.

DR. HEMMETER, opening the discussion on the last two papers, referred to some similar experiments that he had done six years ago. The report of these was not accompanied with any illustrations, because he had no plates available at that time, the whole apparatus now in use being a great improvement upon that formerly obtainable.

DR. GEORGE E. PFAHLER, Philadelphia, said that adhesions might be detected by examining the patient in different positions, if the organs all moved decidedly, but that in some persons, especially those well-nourished, the colon did not move a great deal. He did not believe that such large masses as shown were indicative of being retained in gastric ulcer.

DR. ADLER explained that no large masses of bismuth representing ulcer of the stomach had been thrown upon the screen. The large masses represented ulcer in the duodenum, where it was impossible to get absolute immobility.

### NEURO-MUSCULAR AND SECRETORY CO-ORDINATION BETWEEN THE STOMACH AND THE DUODENUM.

DR. J. C. HEMMETER, Baltimore, brought out the following points: (1) Secretion in the duodenum is not augmented by the presence of hydrochloric acid on the stomach side of the sphincter pylori. The hydrochloric acid or its derivatives must enter the duodenum. There is a periodic undulatory secretion of the intestinal juices in the fasting condition.

(2) Psychic secretion of pancreatic juice occurs in man.

(3) Jejune or fasting peristalsis (Pawlow and Boldyreff) occurs in the human being, probably as a means of evacuating products of excretion. This cannot be observed by the bismuth and x-ray method, because the digestive tract is not empty when bismuth is given. Observations on duodenal and ileocecal fistulas show it, however.

(4) There is a relation between the presence of bile and pancreatic juice in the fasting stomach to

(*a*) Disturbance of reciprocal intervention between the sphincter of Vater and the gall bladder in enteroptosis and

(*b*) The normal jejune or fasting peristalsis of Pawlow and Boldyreff.

### A CONTRIBUTION TO THE KNOWLEDGE ON THE FUNCTION OF THE DUODENUM.

DR. D. KAST, stated that the bulbus duodeni frequently shows food retention, which can be seen on the fluoroscope, if bismuth is mixed with the food. The food retention is often associated with altered peristalsis of the pyloric portion of the stomach and is the explanation for a variety of subjective gastric symptoms. The duodenal food-retention has a diagnostic significance.

### DUODENAL ULCER.

This paper, by DR. LEWIS BRINTON, Philadelphia, was read by DR. WALKER in the author's absence. The main facts brought out in it were as follows:

The principal symptom of duodenal ulcer is pain. There are several remarkable features about the pain of duodenal ulcer that serve to differentiate it from any other kind of pain:

Hemorrhages, while quite frequent in small quantity, are seldom so severe or so productive of alarming symptoms as in gastric ulcer.

Vomiting occurs in one fourth of the cases and shows nothing of uncommon interest.

Tenderness over the stomach is usually pretty constant in its position.

Occasionally there are signs of gastroptosis associated with the ulcer.

Gastric analysis offers but little aid in the diagnosis. The pancreatic action is a factor in the sum total of our diagnostic evidence in duodenal ulcer. No claim is put forth that this test is pathognomonic but it does afford a link in our chain of diagnosis.

Most cases of duodenal ulcer should be treated surgically, but should the day arrive when these ulcers shall be diagnosed in their early stages, then medical treatment will be the rule, and surgery the exception.

The diagnosis having been established, the examination of the feces at frequent intervals for occult blood constitutes a valuable index to control the modification of the diet and surgical treatment.

### THE CAUSE AND RELIEF OF PAIN IN DUODENAL ULCER.

DR. JAMES TAFT PILCHER, Brooklyn, stated that as the result of a study of one hundred cases of ulcer of the duodenum that had been diagnosed and confirmed by operation, and of some experimental work on a series of dogs, he had reached the following conclusions:

(1) Ulcer of the duodenum reflexly excites an hyperacidity of the gastric juice; (2) the maximum amount of secretion of hydrochloric acid in the stomach is due to a direct chemical action (hormones), and is at its height from one to four hours after meals; (3) it passes into the duodenum as hydrochloric acid, there being no food four hours after meals for it to work upon; and (4) it does not excite a flow of the duodenal juice directly and is not neutralized by the small amount present.

The relief of pain in duodenal ulcer follows the ingestion of any substance into the stomach, which

neutralizes the acid gastric juice. This conclusion is based upon the following facts:

(1) Food taken into the stomach excites at once a reflex secretion in the duodenum; (2) the duodenal secretion is alkaline in approximately the same degree as the gastric juice is acid; and (3) this secretion is of sufficient quantity and concentration to neutralize the hydrochloric acid of the gastric juice.

### PERFORATION IN DUODENAL ULCER WITH REPORT OF CASES.

DR. J. A. LICHTY, Pittsburg, considered the diagnosis of duodenal ulcer as being essential for the prompt diagnosis of perforation. He reviewed some of the leading points necessary to make a diagnosis of chronic ulcer, and referred to the distinction between acute perforation and so-called subacute and chronic perforation. From observations in the operating-room, as well as in the autopsy-room, he thought that it could be readily seen how an acute perforation not operated upon might not necessarily be immediately fatal. For this reason, perforating duodenal ulcer was frequently unrecognized. He reported a case illustrating this point, and also one of acute perforating duodenal ulcer that before operation had presented the symptoms of cholecystitis.

### HYPERCHLORHYDRIA AND PYLORIC OBSTRUCTION DUE TO CANCER DEVELOPING IN DUODENAL ULCER.

DR. A. L. BENEDICT, Buffalo, stated that the lesion had probably existed quite a while before the beginning of the period covered by the history, six weeks. There were no marked gastric symptoms. It was not until sudden collapse took place that the real state of the patient's nutrition was realized. The ischochymia was appreciated. The absence of liquid bowel movements was attributed to organic pyloric obstruction of some kind, even before the momentary feeling of a tumor, but it was obvious that the obstruction was not absolute. Owing to the distortion of landmarks, the questions of gastric dilatation and hepatic contraction were not answered by the physical examination. While the extracted stomach contents were abnormal, they were well within the limits within which one is justified in speaking of gastric dilatation. Owing to the restriction placed on the post-mortem examiner, neither question was positively answered at necropsy.

The question of cancer arose early, and this diagnosis was considered highly probable at the outset; but with the demonstration of a degree of free hydrochloric acid this diagnosis of carcinoma, unless in its incipiency, did not seem so probable, until the tumor was felt. In the author's experience, every case in which food has been retained in the stomach over twenty-four hours has proved to be malignant, but even considerable degrees of ischochymia do not warrant the diagnosis of malignancy. The location of the lesions in the duodenum, even the pyloric tumor being an invasion from the duodenum, explained the inconsistent findings. There was no history of bloody or dark passages. Apparently the ulcer had not bled recently, but no fecal matter was available, and the duodenum obviously could not have been invaded through the stomach.

DR. ROBERT T. MORRIS believed that Dr. Kast's work would give an opportunity to make a diagnosis in these cases of cobwebs in the attic of the abdomen, which occurred most commonly from the influence of toxins taken from the colon by the efferent vessels of the portal system and excreted by the liver. He considered that both hypersecretion and hyposecretion meant a derangement of the hormones through deranged hematin secretions acting on the area of the bowel secondarily from adhesions throwing off endothelium of blood vessels, and causing proliferating endarteritis of terminal arteries.

DR. FUHS stated that if the urine of a patient suspected of malignant disease be examined by adding methylene blue and allowing this mixture to stand in a test-tube from twelve to twenty-four hours, the blue would be found decolorized when malignant disease was present, but not if it was absent. Those few other diseases in which it is decolorized can readily be differentiated from malignancy.

DR. DUDLEY ROBERTS, Brooklyn, considered Dr. Einhorn's string-test of value, but said that it might fail when dealing with ulcer not at the pylorus or at the lesser curvature of the stomach.

DR. KAUFMANN questioned whether it was worth while to differentiate sharply between duodenal and gastric ulcer, the only difference being their location. What was desirable, too, was that an ulcer was present, and it would be more desirable to know the pathogenesis of these processes.

DR. EINHORN thought it often of great importance to find out the source of the hemorrhage.

DR. A. G. GERSTER considered the principle of making a precise diagnosis perfectly correct, but thought that the essential thing was to know that one is dealing with ulcer. He endorsed the statement of Dr. Lichty that the perforation of a duodenal or gastric ulcer does not involve immediate danger.

DR. C. J. JOHNSON had noticed marked disturbance of vascular action in several cases that at first had no subjective symptoms of ulcer.

DR. BENEDICT was glad no one had said that every case of hyperchlorhydria signified duodenal ulcer. He preferred bismuth to kaolin. He thought that the fluoroscope would give a better idea of the motions of the stomach than the x-ray plate.

DR. LICHTY had found definite ulceration below the papilla. He believed that a study of uremic duodenal ulcers would give valuable information. In using the string-test, he had found that in cases of carcinoma the blood-stain was long, while in ulcer it was minute.

Dr. WALTER B. CANNON referred to a case of reversed peristalsis of the end of the stomach that he had reported. It occurred after having given mustard, showing that there was a relation between reversed peristalsis and nausea.

### A STUDY OF SIX CASES OF SO-CALLED LARVAL HYPERACIDITY.

DR. JULIUS FRIEDENWALD, Baltimore, said that cases are not uncommon in which symptoms of hyperchlorhydria exist, and yet the gastric contents show a diminution or a complete absence of hydrochloric acid. This condition is explained on the basis of a gastric hyperesthesia. In addition, there are a certain number of cases manifesting similar symptoms, in which the gastric contents present a normal or a lessened proportion of acid; and yet in which, during the earlier periods of digestion, a hyperchlorhydria is at hand. Roth and Strauss first drew attention to this condition, but it was more carefully investigated by Schuler, who termed it "hyperaciditas larvata."

In the larval hyperacidity, there is an actual hyperacidity, which is often not revealed, inasmuch as the gastric contents are not extracted early enough, for the secretion, which at an earlier period would present a hyperacidity, is gradually neutralized before the end of an hour when taking an Ewald test-breakfast. Observations over a series of six cases have been made. Test-meals were given, and removed at varying intervals; and while the percentage of free hydrochloric acid was normal, and subnormal at the end of an hour

after an Ewald test-breakfast, yet it was found that there was a period in which a hyperchlorhydria was manifested.

GASTRIC HYPERSECRETION.

Dr. Arthur F. Chace, New York, stated that the results regarding the secretory function of the stomach obtained by the original Ewald-Boas test-breakfast are not so conclusive as they were originally assumed to be, mainly on account of the closely interrelated and overlapping effect of motility and secretion. In this respect, the dry test-breakfast, as proposed by Boas, eliminates certain features. The results obtained from more than two hundred tests throw light on the extent to which secretion is influenced by motility and suggest that in cases of disordered motility the dry test-meal is a more accurate index of the secretory function of the stomach than is the wet. The rôle of fatigue in gastric function is important.

A NEW TEST-BREAKFAST.

Dr. Dudley Roberts, Brooklyn, considered the Sahli test-meal and its modification by Friedman, for the estimation of the actual residue of test-meal and secreted gastric juice, to have inherent disadvantages dependent upon the use of a fat-emulsion. The writer suggests the use of lactose added to weak tea to the strength of 10%. After the lapse of one hour, a portion of chyme is extracted, and water in known amount added; and a second extraction is performed. By the Mathieu-Raymond formula, the total residue is calculated; and by the estimation of the lactose present, the amount of test-meal remaining is accurately determined. The estimation of the lactose in such a solution is simple. It would seem that the method, because of its simplicity and accuracy, might be worth general adoption.

Dr. Fuhs, opening the discussion on the last three papers, asked whether any correction should be made on account of the sugar that comes through the saliva.

Dr. Kast said that it could be demonstrated that there were two separate secretions going on, one induced by psychic stimulation and the other the gastric juice. In about fifteen minutes after ingestion or sham-feeding, the former, or appetite juice, would be at its height; the secretion of gastric juice does not begin until the food reaches the stomach, its curve rising for a while and then gradually going down, and usually disappearing before the end of an hour. Increased stimulation of gastric secretion due to psychic stimulation is usually found in the beginning rather than at the end of digestion.

Dr. Benedict stated that the secretions normally came up with varying rates into the stomach, and also varied according to the diet and the closeness with which the test-meal represented the ordinary food of the patient. He wished the members to discuss the hypothesis that in cancer there is such activity in the stomach that all the hydrochloric acid is used up, as opposed to the older view that none is produced.

Dr. F. W. White, Boston, wished to know whether in the cases in which the acid came earlier, the pain was also earlier.

Dr. Friedenwald stated that within an hour the pain had appeared, and that in an hour and a half it had vanished.

Dr. Chace had found that both the dry and the wet breakfast showed the automatic regulation that goes on between motility and secretion, in bringing the end results to the same point. He had purposely avoided the use of carbohydrates, because of the rapidity with which they passed to the small intestines.

Dr. Roberts replied to Dr. Fuhs by saying that the objection constituted by the food coming through the saliva had occurred to him. He hoped to be able to answer the question by the next meeting. He considered his test-meal of considerable value on account of its simplicity, the ease with which one could estimate the sugar, the pleasantness of the meal to the patients and the fact that it would give an actual knowledge of the muscular power of the stomach.

Dr. Meltzer stated that experiments on animals by v. Mering and his pupils had shown that sugar is absorbed from the stomach.

Dr. Cannon said these observations had shown that the absorption had occurred only when sugar was present in rather high excess, and he thought that it would be a question as to the percentage in which sugar was present in the meal of Dr. Roberts.

Dr. Roberts agreed with Dr. Cannon, and stated that if he could establish a constant error in regard to the sugar, it would be just as satisfactory as if there were no error.

A NEW SIGMOIDOSCOPE.

Dr. Dudley Roberts thought that sigmoidoscopy should be an important work of the gastro-enterologist. He had made it a routine part of the examination in cases of disturbed function of the bowel and others in which it is indicated. In this instrument, the obturator is much more olive-shaped than in the other forms of sigmoidoscope and proctoscope. It is a foolish idea that obturators must be made rounded, because it is dangerous to shove anything with a sharp point into the bowel, for the instrument is not introduced any further than the anus. There is in this sigmoidoscope a side tube, carrying a small light, the light-holder being standard in all instruments. The rays are passed down, and, by reflection, become parallel. At the proximal end of the instrument, there is a window, which is screwed on. The glass is the full size of the lumen of the tube. Therefore, there is no obstruction whatever to the view. There is another small tube for connection with the rubber dilating bulb. It is surprising what a bright light one can get with this instrument, and it apparently works as well in a small caliber tube as in one of larger caliber. The light is thrown two or three inches from the end of the tube, which is as far as the curve in the bowel will allow one to see. The instruments are made in four sizes.

Dr. Benedict thought Dr. Roberts had done well to get rid of the sidewise projection, which interfered with the rotary movements of the sigmoidoscope. The light also reflected well. Dr. Benedict had found it advantageous to be able to get the light adjusted right down to the point he wished to examine. He did not see any reason to inflate the intestines, except for the purpose of inserting the tube.

Dr. Fuhs considered this instrument superior to any that he had seen in simplicity and in answering the purpose for which it was designed.

Dr. Thomas Charles Martin, Washington, D. C., did not believe that he had seen the sigmoid flexure in more than 5% of the cases that he had examined, owing to the fact that when the sigmoid inflates, it often approaches a point nearer the anus than is the upper end of the rectum.

Dr. Roberts explained that the inflating bulb was not used so much to inflate as to puff folds of mucous membrane out of the way. He thought that Dr. Martin was rather conservative in his estimation of the number of times that he had been able to get into the sigmoid.

FURTHER EXPERIENCE WITH THE BENZIDIN TEST FOR OCCULT BLOOD IN DISEASES OF THE DIGESTIVE ORGANS.

DR. F. W. WHITE, Boston, gave a review of the literature of the subject, and referred to the results with the Schlesinger and Holst modifications of the benzidin test in several hundred recent cases. He described the technic of the test, and stated that he did not consider it over-delicate, a large number of negative results having been obtained. In feces, positive results were obtained only with ulcerative lesions of the gastro-intestinal tract and hepatic cirrhosis. The benzidin test has many advantages over the guaiac test. The author also made a brief comparison between the benzidin test and the phenolphthalein test for occult blood.

DR. ALBERT BERNHEIM, Philadelphia, stated that within the last few weeks he had tried a new test with fluorescin which acted in the same way as phenolphthalein and was more delicate than the latter in some cases.

DR. ROBERTS had come to the conclusion that positive findings were of great value in the benzidin test, but that negative findings indicated comparatively little. Several times he had been much confused because patients had taken hemoglobin preparations, and he had had to guard against this source of error with great care.

DR. FUHS stated that in testing for blood in the stomach contents, he always tested the saliva also for blood. Benzidin added to stomach contents, he further stated, seemed to have the property of liquefying mucus.

DR. BENEDICT had found several cases in which the occult blood in the feces came from a spot but ten inches above the anus.

DR. WHITE thought that both the positive and the negative findings had a good deal of value. If in patients with suspicious symptoms he found no occult blood after they had had time to develop cancer, he considered this good evidence against the existence of malignant disease. He considered positive results in the feces of much more value than the same results in the stomach contents.

LYMPHOCYTOSIS IN CERTAIN GASTRO-INTESTINAL CASES.

DR. JOHN P. SAWYER, Cleveland, Ohio, said that in practically all his cases, for several years, a differential count had been made under his own control; and in the course of these observations he had often found the differential count of clinical advantage. He did not refer in this clinical study to established departures from normal counts, as found in the known so-called blood diseases; he wished to speak more especially of the considerable variations from the usually accepted average differential counts in adults; for in children we have the known mononuclear lymphocyte counts in high proportion. The average lymphocyte count is about 30%. A slight variation from this is not of considerable moment, but when the lymphocyte count rises to 40 or 50%, this is probably indicative of a considerable departure from the usual blood formation. The lymphocytes are the product of the lymph tissues, discharged into the blood. Therefore, from a study of cases of high lymphocytosis, it is possible to gather information regarding possible stimulation of lymphatic tissue. These large lymphocyte counts are found without leucocytosis in a considerable number of diseases; among them, cases of gastro-intestinal disease. It occurs in cases in which gastro-intestinal catarrh is not discoverable by examination of the test-meal or of the stool, and in which the history shows no record of the existence of such catarrh recently. The condition of the gastric secretion seems to have no determining influence upon this lymphocytosis. It is usually found in persons whose resistance is low. In such cases it is possible, by treatment of the patient, to bring about a very prompt and decisive change in this lymphocytosis. This treatment consists in the administration of iodide of iron for a few weeks and the exhibition of arsenic. This treatment brings about a prompt reduction in the lymphocyte count, and the patients gain rapidly in weight and strength.

DR. MELTZER had come to the conclusion that there was a difference in the ferment between the leucocytes and the lymphocytes, on acting in alkaline, and the other in acid media; and he thought that there might be a definite relation between certain conditions of acidity and lymphocytosis.

DR. SAWYER said that he would be glad if Dr. Meltzer could work out any connection between the two.

IS PELLAGRA A DISEASE PRIMARILY OF THE ALIMENTARY TRACT?

DR. J. C. JOHNSON, Atlanta, considered pellagra to be a disease distinct from all others, and stated that it is not acute in the sense that idiopathic fevers are. Its duration is strangely variable. Necessary to its development are certain positive conditions of the organism; chiefly a disturbance of inorganic balance. These conditions are emphasized with the progress of the disease. It often exists long before it is recognized or suspected. Gastro-intestinal symptoms are usually the first to appear, and are in proportion to the gravity of the attack. There is an absence of hydrochloric acid in advanced cases; and in many, a lack of ferments. The cases were treated successfully with chloride of potassium, tincture of iron and essence of pepsin.

DR. MELTZER thought that the fact that the serious cases of pellagra had no hydrochloric acid and that the cases that had hydrochloric acid had no serious symptoms indicated that the cause of the disease was of a kind that had to pass the stomach. If hydrochloric acid was present in sufficient strength there, the disease would not develop.

DR. BENEDICT expressed the opinion that there was absolutely nothing specific or in the nature of an entity about pellagra. He considered cases of it nothing but ordinary senility, insanity, skin-eruptions of various and all sorts of toxemias.

DR. JOHNSON replied that if Dr. Benedict had ever seen a case of pellagra, he would have no doubt of its being a distinct disease. In Dr. Johnson's cases, the usual remedies were not employed at all. He merely gave potassium chloride, tincture of iron and essence of pepsin, and all the symptoms were usually relieved in a week's time.

DR. MELTZER said that such a statement as Dr. Benedict's should not be made in an offhand way. For instance, four years ago, no one would have considered poliomyelitis a disease entity.

DEMONSTRATION OF A CASE OF VOLUNTARY AND INTENTIONAL REGURGITATION.

DR. ALBERT BERNHEIM, Philadelphia, stated that the patient, a young physician, can regurgitate food voluntarily and intentionally, whenever he desires to relieve symptoms of gastric distress. He usually takes a glass of water, to liquefy the contents of his stomach, so that they may come up easily; and also takes some bicarbonate of soda, so that the acidity of the regurgitated material may not injure the mucous membrane of the throat and mouth. He then bends over, so that

the abdominal muscles compress the stomach. The esophageal opening of the stomach then dilates, and the food comes out.

Dr. Meltzer said that he could hear what he called the second deglutition sound, which occurred immediately after the beginning of swallowing, indicating that the cardia was patent. He considered this the reason why the patient could relieve himself so readily of the contents of the stomach.

Dr. A. Owaroff, Philadelphia (the patient), said that if the cardia were always open, he would get some fluid in his mouth when he bent down, but that it was only when he wished it to do so that the fluid came up into his mouth.

Dr. Meltzer explained that a patent cardia did not mean one that was always entirely open. It had a moderate degree of closure, which was overcome by a very slight stimulus, such as that afforded either by the beginning of deglutition or by the pressure with the abdominal muscles. He was not inclined to believe the opening of the cardia voluntary.

Dr. L. M. Gompertz had a patient who was able to regurgitate his food. On one occasion, this patient had had an attack of complete reversed peristalsis, vomiting turpentine five minutes after it had been given by enema. He recovered from this attack without treatment.

### CONSTIPATION WITH DIARRHEA.

Dr. Albert Bernheim, Philadelphia, said that some varieties of constipation are found in cases of gout after operation (adhesions, kinks, spasms); some are found in tuberculosis; and others manifest themselves, not as constipation in the usual conception of that condition, but apparently as cases of diarrhea. There are symptoms of auto-intoxication (vasomotor ataxia) and nervous conditions; also symptoms simulating appendicitis. Tests should be made for peristalsis and fecal matter. The treatment is medicinal, physical, hygienic and dietetic.

Dr. Fuhs, in connection with the difficulty in differentiating between appendicitis and stagnation and impaction of fecal matter in the cecum, mentioned the fact that there is a point of marked tenderness at the second intercostal space in the latter condition, on a line drawn from the middle of the clavicle downward.

### MITRAL MURMURS IN GALLSTONE DISEASE.

Dr. David Riesman, Philadelphia, stated that in a number of cases of gallstone disease he had heard a mitral systolic murmur during and shortly after an attack of colic. He had found these murmurs perplexing when the advisability of operative treatment was to be weighed. In all the cases seen by him, the murmur had not existed prior to the attack of colic. It was not due to endocarditis, for it disappeared soon after the attack. It was not due to anemia; and it was not due to jaundice, because it could be heard in cases that did not have icterus. It probably depended on temporary dilatation of the heart. Dr. Riesman believed that the chronic disease of the biliary tract, with its accompanying infection, had caused a myocardial degeneration, somewhat akin to that found in connection with fibroid tumors of the uterus. The degeneration predisposed the heart to dilatation when, during the attack of colic, the blood-pressure rose. The murmur was loud and unmistakable. The heart was enlarged, but not to any great degree. Dr. Riesman did not consider the presence of the murmur any contra-indication to surgical intervention. Indeed, if the pathogenesis was as stated, it would constitute a point in favor of operation. Care should, however, be taken in giving the anesthetic.

Dr. Meltzer drew attention to the fact that sometimes, a murmur would exist in association with pain so excruciating as to lead one to believe it due to some trouble with the gall bladder, while it was really a symptom of angina pectoris. He had no doubt, however, that in Dr. Riesman's cases there were definite evidences of the existence of gallstones.

Dr. Fuhs had seen two cases of distinct biliary colic with asthmatic attacks in patients who had never had any asthmatic attacks before the attack of cholelithiasis, and never had one after it. There was no functional or organic disturbance of the circulatory system either before or after the attack of gallstones.

Dr. Riesman agreed with Dr. Meltzer that angina pectoris might manifest itself with pain in the epigastrium or upper abdomen, but stated that he had been speaking of genuine cases of gallstone disease.

Dr. Walter B. Cannon was re-elected president of the Association, and Dr. F. W. White, of Boston, was elected secretary-treasurer.

## Book Reviews.

*Biology, General and Medical.* By Joseph McFarland, M.D., Professor of Pathology and Bacteriology, Medico-Chirurgical College of Philadelphia. With 160 illustrations. Philadelphia and London: W. B. Saunders Company. 1910.

In preparing this book, McFarland has had in mind the general reader rather than the special student. To this end he has discussed biological problems in such a way as to be intelligible to readers who have relatively small acquaintance with the natural sciences. Finality is not attempted, but rather a personal expression of opinion. Particular stress is laid upon the questions of blood-relationship, infection, immunity, parasitism, inheritance, mutilation, regeneration, grafting and senescence, — all matters in which the laity has a wide and abiding interest. The probable value of the book to those contemplating the study of medicine justifies the sub-title, "Medical Biology." The text is entertainingly written and fully illustrated, largely by drawings. Although by no means an authoritative treatise on biology, to which, in fact, it makes no pretense, the book presents many subjects in such a way as to incite to further study and to popularize a fundamental branch of science.

*Pulmonary Tuberculosis and its Complications.* By Sherman G. Bonney, A.M., M.D., Professor of Medicine, Denver and Gross College of Medicine, Medical Department of the University of Denver. Second edition, thoroughly revised, with 243 original illustrations, including 31 in colors and 73 x-ray photographs. Philadelphia and London: W. B. Saunders Company. 1910.

This work on tuberculosis has been well received, as is indicated by the fact that it was reprinted in 1909 and revised and entirely reset in 1910. The first edition was reviewed at length

in these columns on page 589 in the issue of May 6, 1909. The errors to which we then called attention remain uncorrected in the present edition.

Five new chapters have been added and many sections of the work have been thoroughly revised. A large amount of information not given in other books will be found in this volume.

The portion of the book which deals with the treatment of the disease is excellent. The author sounds a needed warning against the employment of exercise as a therapeutic measure in the active stage of phthisis.

The work is a wiser guide on treatment than it is on diagnosis. As nothing is more important than the early recognition of pulmonary tuberculosis, the reader has a right to expect in a work of this magnitude a reflection of the best modern teaching. This he will fail to find. If the student is guided by the author in his examination and diagnosis it is safe to say that not a small proportion of incipient cases will not be recognized. Bonney, in this edition, as in the first, emphasizes the "vast importance of râles as a factor of early diagnosis." It is now recognized by the leading authorities, such as Kroenig, Turban and A. Fraenkel, in Germany, and Babcock, Brown and Minor in this country, that other physical signs precede the development of râles. In fact, Fraenkel maintains that when râles are heard the disease is no longer in its incipient stage. As Minor says, "One should under no circumstances wait until they develop before making a diagnosis."

The value of percussion as an aid to early diagnosis is not appreciated by the author. The truth demonstrated so clearly by the clinical and pathological studies of Kroenig and Oestreich that impairment of pulmonary resonance on *light* percussion occurs in the incipient stage of phthisis is still denied by the author. After showing by collected statistics that in about 50% of the patients with active pulmonary tuberculosis it is not possible to demonstrate tubercle bacilli in the sputum, Bonney adds that "there can be no greater dereliction of duty on the part of the physician than to withhold the diagnosis until the appearance of bacilli." With this sound statement in mind, it is surprising to read in another place that "save under very puzzling conditions, recourse to the old tuberculin of Koch by subcutaneous injection is quite unnecessary and unwarranted."

*Landmarks and Surface Markings of the Human Body.* By L. BATHE RAWLING, M.B., B.C. (Cant.), F.R.C.S. (Eng.). With thirty-one illustrations. Fourth edition. New York: Paul B. Hoeber. 1911.

This admirably illustrated volume, with a well-written descriptive text, presents clearly and concisely the surface anatomy of the body, and the surface relations of deep anatomic structures. An appendix contains the dimensions and weights of various organs. The book is a manual of standard value for students, teachers and practitioners of medicine.

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## SOME MODERN ASPECTS OF ENGLISH RACE MIGRATION.

THE returns of the recent British census afford material for interesting study in the growth of populations and in the problems of race diffusion and evolution. Provisional figures indicate that the population of England and Wales has risen from 32,527,843 in 1901 to 36,075,269 in 1911, a net gain of approximately 11% during the past decade. This in itself would seem fairly gratifying, and should abate the apprehensions of some of the prophets of race deterioration, but unfortunately this gain in numbers has not been equalled elsewhere. The population of Scotland, now 4,759,521, has increased only 287,418 since 1901, a net gain of about 6.4%.

Everywhere in Great Britain the increase has been proportionately greatest in the large cities, but in Scotland even the cities have grown at less than half the rate of those in England. The population of London has grown from 6,581,402 in 1901 to 7,252,963 in 1911, a gain of 671,561, nearly 2½ times as much as that of all Scotland. This increase, it is said, however, has been largely in the peripheral districts of the city, a fact illustrating the tendency of modern populations to simultaneous aggregation and suburbanization. With the development of facilities for rapid transit, precisely this some phenomenon has been observed in our large American cities. Centralization and decentralization proceed together. It becomes possible more and more to combine the advantages of working in a large city, and sharing its educational opportunities, with those of living in a relatively rural district, having ready access to the city on the one hand, without the deprivation of civilized facilities

often associated on the other hand with life in the country.

While England and Wales have in this manner grown rapidly and Scotland slowly, the population of Ireland has diminished. The decrease, however, has been only 1.7%, the least of any decade for the past seventy years. It is particularly interesting that this decrease has been proportionately much greater among women than among men. The total number of males now in Ireland is 2,186,804, a decrease of only 0.6% since 1901; the number of females is 2,195,147, a decrease of 2.8%. The ratio of the sexes is more nearly equal in Ireland to-day than in any other modern civilized country. In Great Britain, women are far in excess over men.

The cause of some of these facts is not far to seek. The loss of population in Ireland and its sluggish gain in Scotland is an evidence not so much of race suicide as of race migration. The efflux of Irish population to the United States, which deserves to rank with the great racial movements of history, is the chief cause of the decline in Ireland, since the excess of births over deaths in that island still amounts to about 20,000 a year. The change in ratio of the sexes is apparently due to economic causes, the women being much more attracted by their opportunities for employment in this country than the men.

In Scotland migration also seems to have been the chief reason for failure to gain more rapidly in population. Great Britain's loss in this respect has been Canada's gain, for during this past decade 750,000 immigrants have come to Canada from the British Isles. Of these, it is true, 560,000 have been English and Welsh, and 150,000 Scotch; but these figures represent a proportionately much greater loss for Scotland than for England. During this same period Canada has derived 700,000 immigrants of English extraction from the United States.

The bearing of these facts on future history may be more important than at first appears. Such a migration should mean that the future civilization of Canada is definitely to be governed by Anglo-Saxon ideals. Coming at a time when there is so large an influx of alien Semitic and Latin peoples into our own country, it should mean the establishment of Anglo-Saxon institutions on a desirably firm footing in the great and developing nation on our North. That the civilization of this continent should be determined by the customs and traditions of our own race, we cannot but believe to be for the best. In its larger aspects, therefore, the relation of British population to our own and to that of Canada is of special significance, for it represents the continued dissemination to our continent of cognate racial stock and ideals. The migrations from the British Isles during the past decade are but part of the world-wide diffusion of the English-speaking people, whose unresting energy has in fifteen centuries carried their influence to every extremity of the globe.

## THE MAIN GATEWAY TO THE WESTERN WORLD.

"Don't hinder commerce; let the ships go up!" "Keep up the standard of future citizenship; don't let the incompetent get by!" These are the maxims established at quarantine in New York Harbor by Health Officer Alvah H. Doty and Dr. George W. Stoner, of the Department of Commerce and Labor.

It is the province of Dr. Doty and his assistants to detect and eliminate infection at the port of New York. The law requires them to inspect ships to this end between sunrise and sunset, but they know no sunset, and sometimes no sunrise. They are now on duty, one or another, all the time; and are ready to board a vessel any hour, day or night, it wants to enter the upper bay. Of weather, no account whatever is taken. When ships come in, one after another, they don't even have to anchor; oftentimes the vessel has moved well up into the harbor while the health officer is making his inspections.

It is indeed a dangerous occupation — that of safeguarding our people against meningitis, plague, cholera, yellow fever, smallpox, typhus and what not else. Dr. Doty has observed that "one is practically bound to go down sooner or later," catching a disease either on shipboard or in either the Swinburne or Hoffman Island hospitals. The death on March 21 last of young Dr. Edward F. Ashley from cerebrospinal meningitis evidences what may happen even when the most elaborate precautions are taken. A good health officer, in Dr. Doty's opinion, has no personal fear; "a man engaged in quarantine work who stops to think of himself is no good. My assistants are good; they are the cream of the hospital graduates of the city." And men must indeed be "good" who keep at the work day and night when the occasion demands, who are ever ready to meet any emergency, who detect the sick and the bacterium carriers, and still hold the ship no longer than is positively necessary. There is a most noteworthy enthusiasm about

these physicians; men have been called heroes for much less than they do.

This quarantine station is, perhaps, the best place in the world to study infections; there constantly arise complicated cases that cannot be duplicated in any European hospital. One half the shipping of the United States annually passes this station, and seven eighths of the immigrants who bless us with their advent pass through the Narrows. In a twelvemonth Dr. Doty and his assistants board all kinds of ships, from famous liners to rusty tramps that hail from what not potentially infective region. In seven hours of one day twelve thousand travelers were examined.

The detection of the obviously sick has ceased to be the main work at quarantine; every year more and more stress is being laid upon the bacteriological aspect of the work. The bacteriological staff are as enthusiastic in their work as are the boarding officers, the hospital physicians and surgeons and (let us by no means neglect to observe) the self-abnegating nurses. At quarantine they don't take anybody's word for anything. There is here no reflection upon the ability or probity of ship's surgeons; but when there has been sickness on a voyage, quarantine makes its own examination, bacteriologically if necessary. Here it has been established at first hand, for example, that persons apparently well may nevertheless be carriers of cholera vibrios; and by this means was cholera kept out of our country in the fall of 1910.

It is again most noteworthy that the federal government has now its agents in many European ports; indeed, a sure change is coming about in quarantine work; it will soon be practically all done at the ports of departure. Keeping the sick, and those who have been exposed to infection, off the boats before they sail is much cheaper, much more expedient, than quarantining them here or sending them back to Europe at the expense of careless and selfish ship owners. Moreover, one sick man, when the ship leaves Europe, is very apt to mean several cases of sickness developed during the voyage. Suspects are now being examined and detained at ports of departure; by this means, moreover, are the European companies spared the expense of treatment and housing for the sick and the suspects in the New York harbor hospitals.

Again, quarantine has demonstrated that live steam is the best of disinfectants, and that cargoes, moreover, do not convey disease. Quarantine does not now bother about cargoes; it concerns itself with persons and (except as to yellow fever) only with immigrants. Nor are disinfectants or deodorants used in cleaning in either the Hoffman or Swinburne Island hospitals; soap and hot water do the work; in addition, the floors are regularly painted and repainted with red lead.

At Ellis Island Dr. Stoner and his staff observe and "put the chalk mark" on the shoulders of all immigrants suspected of being "idiots, imbeciles, feeble-minded persons, epileptics, insane persons and persons who have been insane within five years previously; persons who have had two or more attacks of insanity at any time previously; persons afflicted with tuberculosis or with a loathsome or dangerous contagious disease; persons not comprehended within any of the foregoing excluded classes who are found to be and are certified by the examining surgeon as being mentally or physically defective, such mental or physical defect being of a nature which may affect the ability of such alien to earn a living." During the last fiscal year Dr. Stoner and his aids examined 741,590 steerage passengers and certified 19,545 for physical or mental defects.

## MEETING FOR THE BOSTON INFANTS' HOSPITAL.

IN the issue of the JOURNAL for May 18 we noted the present status of the new building for the Infants' Hospital, and announced the meeting to be held on May 24 in its interests. At this meeting, attention was called by the various speakers to the work already accomplished by the hospital during the past twenty years of its existence. Bishop Lawrence, the first speaker, emphasized particularly its service in the education of mothers and the training of nurses in the care of infants. The second speaker, President Eliot, referred to the reduction of infant mortality by diffusion of the knowledge of methods of feeding with percentage modification of milk.

The principal address was made by Dr. John Collins Warren, who described the steps already taken towards the establishment of a new medical center in this city around the Harvard Medical and Dental schools. The Infants' Hospital, he pointed out, "is not only a place where infants are to be nursed and cured, but is to be dedicated also to the study of the many delicate and serious problems of early life." The service of such an institution to the community is not solely in the saving of individual life and the alleviation of suffering, but in the solution of such problems

and in the training of physicians to continue that study and service. To establish and assure permanence to the future of this great work is the purpose of those now interested in the welfare of the Infants' Hospital.

The plans of the new building for the hospital were exhibited and described by the architect, Mr. Arthur E. French. The exterior of the building is now essentially completed. To finish the interior and equip the hospital for work in its new quarters a further sum of $120,000 is needed. The gift of this amount should come not from the lavish generosity of a few individuals, but from the ready gratitude of many for the work already done by the institution and for the privilege of helping to establish it in larger and fuller opportunity for service in the future.

## USE OF SACCHARINE IN FOODSTUFFS.

Report from Washington, D. C., states that the pure food board of the United States Department of Agriculture has recently declared that saccharine impairs the digestion and is not a fit constituent of food-products. Its use in foods is, therefore, held to be contrary to the pure food and drug law and is to be prohibited after July 1, 1912. Saccharine, or benzoyl-sulphimide, a coal-tar derivative, with the formula $C_6H_4SO_2.CONH$, is a light, white, slightly soluble, odorless, crystalline solid, about five hundred times as sweet as cane sugar. It was discovered by Dr. Ira Remsen, of Baltimore, Md. In medicine it has been used extensively as a dietetic substitute for sugar in glycosuria, apparently without harmful results. Riegler[1] states that in the stomach it delays the proteolysis of gastric juice; and Bornstein[2] believes that its prolonged use often leads to digestive disorders. Its use in foodstuffs has been for its antiseptic properties as well as for sugar substitution. The manufacturers have already protested against the action of the Department of Agriculture in forbidding its further employment for this purpose.

## MEDICAL NOTES.

Diphtheria at University of Minnesota. — Report states that diphtheria is at present prevalent at the University of Minnesota. A number of students and several professors are said to have been sent to hospital with the disease.

Honorary Degree for Dr. Gorgas. — At the annual commencement of Tulane University, on May 17, the honorary degree of LL.D. was conferred on Col. William Gorgas, U. S. A., chief of the United States sanitary forces in the Isthmian Canal Zone.

A Tall Woman from Missouri. — Report from Chicago states that there is resident at Gorin, Mo., a woman by the name of Ella K. Ewing who is said to be 9 ft. 1½ in. in height and to weight 385 pounds. She is believed to be the tallest person in the world.

New York Homeopathic Medical Alumni. — The annual meeting of the Alumni Association of the New York Homeopathic Medical College is being held in New York City this week. The commencement exercises took place on Wednesday, May 31; and on June 1 there are to be clinics, addresses and in the evening a dinner.

Changes in Professorships at University of Pennsylvania. — It is reported from Philadelphia that Dr. Richard M. Pearce, formerly professor of pathology at the University of Pennsylvania, has been transferred to the chair of experimental pathology in that institution; and that Dr. Allen J. Smith, formerly professor of tropical medicine, has been transferred to the chair of pathology.

Death of Danish Prince. — Report from Copenhagen states that on May 27, Prince John, of Denmark, died of pneumonia in the Castle of Elsinore, at the age of eighty-five years. The Danish royal family has of late shown greater longevity among its members than in the days of Hamlet.

The Alexander Agassiz Gold Medal. — It is announced that Sir John Murray, the eminent British scientist, has recently presented to the American National Academy of Sciences a fund of $6,000 for the establishment of the Alexander Agassiz Gold Medal, to be awarded annually for the best original contribution to the science of oceanography.

Notification of Births in Belfast. — In Belfast, Ireland, an ordinance of the local board of health requires notification of every birth to be made separately by the father as well as by the physician or midwife in charge, the two reports acting as check on each other. This notification must be given within six hours after the birth, and the penalty for failure to comply with the regulation is a fine of twenty shillings.

[1] Arch. für exp. Path. u. Phar., xxv, p. 306.
[2] Zeitschr. für klin. Med., xl, p. 208.

OFFICERS OF AMERICAN DERMATOLOGICAL ASSOCIATION. — At the thirty-fifth annual meeting of the American Dermatological Association, held at the Hotel Lenox, Boston, Mass., May 25, 26 and 27, 1911, the following officers were elected for the ensuing year: President, Dr. Grover William Wende, of Buffalo; vice-president, Dr. James Sullivan Howe, of Boston; secretary and treasurer, Dr. James MacFarlane Winfield, of Brooklyn; councillor-at-large, Dr. William Allen Pusey, of Chicago. St. Louis was selected as the next place of meeting.

SUSPECTED CASE OF SMALLPOX AT MONTREAL. — It is reported from Montreal, Canada, that on May 21 the steamer *Gothland*, with two hundred and twenty-eight Scandinavian and German immigrants aboard, was detained at the Grosse Isle quarantine station of that port on account of a suspected case of smallpox in the steerage. After thorough fumigation, however, the vessel has since been allowed to proceed to Quebec.

REQUESTED APPROPRIATIONS FOR CONSUMPTIVES' HOSPITALS. — It is reported from New York that the State Charities Aid Association and the Committee on the Prevention of Tuberculosis have recommended this year an appropriation of $1,149,200 for the completion of the Sea View Hospital for Consumptives, in addition to the large regular appropriation made by the city for the care of tuberculous patients. In this connection, it is interesting to note, by way of comparison, that the amount appropriated this year by the Commonwealth of Massachusetts for the maintenance of its four existing state sanatoria is $326,814.12, but that the governor has refused to approve a requested special appropriation of $30,000. In Boston an additional appropriation of $130,000 has been asked for the construction, at Mattapan, of a new hospital building and children's ward for tuberculosis.

## BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, May 23, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 37, scarlatina 31, typhoid fever 5, measles 176, smallpox 0, tuberculosis 53.

The death-rate of the reported deaths for the week ending May 23, 1911, was 18.09.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, May 27, 1911, was 238, against 215 the corresponding week of last year, showing an increase of 23 deaths, and making the death-rate for the week, 18.01. Of this number 120 were males and 118 were females; 229 were white and 9 colored; 156 were born in the United States, 80 in foreign countries and 2 unknown; 64 were of American parentage, 142 of foreign parentage and 32 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 42 cases and 1 death; scarlatina, 56 cases and 1 death; typhoid fever, 6 cases and 2 deaths; measles, 171 cases and 2 deaths; tuberculosis, 48 cases and 24 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 36, whooping cough 1, heart disease 27, bronchitis 0. There were 16 deaths from violent causes. The number of children who died under one year was 38; the number under five years, 63. The number of persons who died over sixty years of age was 69. The deaths in hospitals and public institutions were 93.

ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY. — At the coming meeting of The Massachusetts Medical Society several changes in the usual program have been made which it is hoped will make the meeting more successful than ever. The Harvard Medical School is an ideal place for the meeting, having large amphitheaters in close connection with laboratories, in which demonstrations will be given immediately after the section meetings, illustrating the papers when possible. This will be especially valuable after the symposiums on syphilis and circulatory diseases, as it makes it possible to demonstrate the Wassermann reaction, the treponema pallida, blood-pressure apparatus, etc.

The quadrangle at the school makes a pleasant meeting place for the members.

The tea and demonstrations to which the Society is invited at Tufts Medical School by the faculty will give members an opportunity to inspect those buildings.

The attempt has been made this year to center the exercises at the medical schools, but for those wishing to see clinical work, attractive programs have been arranged at the Boston City and Massachusetts General hospitals on Tuesday morning beginning at ten.

SIXTIETH ANNIVERSARY OF THE PLYMOUTH DISTRICT MEDICAL SOCIETY. — The Plymouth

District Medical Society celebrated the sixtieth anniversary of its first meeting on Saturday, May 27. It was an interesting and instructive occasion. The meeting was held in the building of the Masonic fraternity, as nearly as possible on the site of the first meeting. An excellent exhibit of medical souvenirs of former days had been gathered together. A dinner was served to sixty members and invited guests, after which the literary exercises of the day followed. There was an address of introduction and welcome by the president of the District Society, Dr. Wallace C. Keith, of Brockton; an address of greetings and congratulation by Dr. George B. Shattuck, president of the State Society; an historical address by the Society's historian, Dr. Gilman Osgood, of Rockland; and an address on the "Surgery of 1911 and the Surgery of 1851" by Dr. Maurice H. Richardson, Moseley Professor of Surgery in the Harvard Medical School. After the exercises a handsome commemorative volume, judiciously and industriously compiled by Dr. Gilman Osgood, was distributed to those present. Dr. Osgood states in the introduction that "the object of this book is not so much to preserve records of the exercises of the day as it is to revive memories of doctors of the past, and preserve biographies of those of the present, all of whom have practiced medicine in the Plymouth district, which is rich in material relating to the history of medicine in New England."

Mount Sinai Hospital Society. — The annual meeting of the Mount Sinai Hospital Society was held in Boston last week. Particular appeal was made for contributions to the fund for the erection of a new Jewish hospital in this city.

Scarlet Fever at Wellesley. — It is reported that four cases of scarlet fever have recently occurred among students at Wellesley College. The cases have been promptly isolated and no general epidemic of the infection is expected.

Address by Dr. Cannon at Yale. — It is announced that at the coming commencement exercises of the Yale Medical School, the annual address to the graduating class will be given by Dr. Walter B. Cannon, of Boston, professor of physiology at the Harvard Medical School.

Nurses' Graduation at New England Hospital. — The annual graduation exercises of the nurses' training school were held last week at the New England Hospital for Women and Children, Roxbury. The principal address was made by Dr. Robert W. Lovett, of Boston, and diplomas were given to thirteen pupils.

Care of Rhode Island Leper by Massachusetts. — In the issue of the Journal for May 18 we noted the refusal of the Massachusetts State Board of Charity to receive at Penikese Island the leper recently discovered at Pawtucket, R. I. The Governor of Rhode Island has now made request for special legislation by Massachusetts to permit this patient to be cared for at the leper colony, but it is not known whether this petition will be favorably considered.

Committee Report on Two Hospital Bills. — The committee on public charitable institutions of the Massachusetts House of Representatives has reported favorably a bill "requiring every city and town to establish and constantly maintain one or more isolation hospitals for the reception of persons having diseases dangerous to the public health. Failure to comply with this bill is made punishable by a fine of $500." The committee has reported adversely on a bill "providing for the establishment of a homeopathic sanatorium for tubercular patients."

Continuance of the Drought in Massachusetts. — The drought in Massachusetts, to which we made editorial reference in last week's issue of the Journal, was little relieved by the somewhat scanty rain of the past ten days. Report from various cities indicates impending likelihood of a water famine. At Worcester, the city reservoirs contain only half their full capacity. At Salem and Beverly, which both obtain their water supply from Wenham Lake, there is already a marked shortage. In these and in other towns there will be distinct hardship for want of water this summer unless the situation is relieved by early and profuse rains.

Two Recent Boston Appointments. — In the issue of the Journal for May 18 we noted the nomination of Dr. Patrick Henry Mullowney to be a member of the Boston Board of Health. This appointment has been confirmed by the Civil Service Commission.

It is also announced that the Boston Board of Health has appointed Dr. John McLeod Martin, of Dorchester, to the position of school physician recently left vacant by the resignation of Dr. John L. Ames. Dr. Martin, who received the degree of M.D. from McGill University in 1889,

is professor of nervous diseases at the College of Physicians and Surgeons, Boston. He is a member of the American Medical Association and a Fellow of The Massachusetts Medical Society.

## NEW YORK.

MORTALITY STATISTICS. — The death-rate in the city for the first quarter of 1911 is announced to have been 17, as against 17.45 in the corresponding quarter of 1910, and an average rate of 18.33 for the first three months of the past five years. There was an increased number of deaths among old people, but a falling off in infant mortality, and while the mortality from organic heart diseases increased, that from tuberculosis, pneumonia and Bright's disease declined.

A CENTENARIAN. — Mrs. Hannah Van Tassel, of Cold Springs on the Hudson, who celebrated her supposed one hundred and first birthday in January last, died on May 20, after a short illness. She was married in 1828, the year the first railroad in the United States was built, but only three of eleven children she has had are still living. Her oldest son is now eighty-one.

"DONATION DAY," ST. JOHN'S HOSPITAL. — At St. John's Hospital, Long Island City, the largest hospital in the Borough of Queens, there is an annual "donation day." This year it was held on May 21, and at a public meeting in the chapel the work and needs of the institution were set forth by Dr. James J. Walsh, dean of the medical school of Fordham University. The donations were the largest ever made since this custom was started, several thousand dollars in money and supplies being received.

A NEW USE FOR QUININE. — According to the newspapers, a new use has been discovered for quinine. It occurred to a certain housewife in East Orange, N. J., that because quinine had benefited her husband, a sufferer from malaria, it might perhaps be good for a favorite hen which was ailing. Accordingly, she administered a two-grain pill, and before long was gratified to find her patient the liveliest Leghorn in the yard. The next day the hen not only laid her accustomed morning egg, but a second one in the afternoon; and since then, we are assured, she gets a quinine pill every morning and regularly lays two eggs a day.

OPENING OF PUBLIC MILK STATIONS. — On May 22 twenty-seven milk stations were opened in different parts of the city by the Committee for the Reduction of Infant Mortality, and the occasion was marked by public exercises at Seward Park, on the lower East Side, where one of the stations is located. Music was furnished by a band of forty-five boys from the Mott Street public school, and Dr. Godfrey R. Pisek, of the Babies' Ward of the Post-Graduate Hospital, who is chairman of the committee, presided. Among the speakers were Bishop David H. Greer and Commissioner of Health Lederle, who complimented the committee highly on its work. In his remarks Dr. Pisek stated that a record would be kept of all cases, and if at the end of six months it could be shown that in the districts where the stations were located infant mortality had been materially reduced, the city, which this season is maintaining a limited number of milk stations, under the direction of the Health Department, would be asked to take charge of the entire work in the future. Thirty-three additional stations are to be opened by the committee this summer, making sixty in all. Each of the stations is in charge of a matron and has an attending physician and a nurse who visits the mothers and babies in the district.

TRAITS OF THE CRIMINAL INSANE. — Dr. Richard R. Daly, of Atlanta, Ga., formerly an assistant physician at the State Hospital for Insane Criminals, has published in a New York paper some interesting comments on the recently divulged assassination plot among the inmates of that institution, upon which we commented editorially in last week's issue of the JOURNAL. One of the characteristics, he says, of the criminal insane, in which they differ very markedly from the ordinary insane, is in this faculty or habit of combination. In their sane life these men are in the habit of forming combinations to do their work, as the various gangs of pickpockets will show. They are always on the lookout for traitors, sometimes wreaking a fearful vengeance on one of their number who betrays them or is suspected of doing so. This habit of thought and life is fundamental and follows them to asylums and jails, though they are well aware that greater temptation for betrayal exists in these institutions than in free life. They fear this more than they do the delusions of the insane. "However," Dr. Daly goes on to say, "the combinations that I have been familiar with, and I saw many, of varying importance, during my time of study at Matteawan, were not made among men who had bizarre delusions. The paranoiac without grandiose ideas, the habitual criminal, the slightly demented one who would follow directions, and the malingerer made up

the group. They were dangerous, and the history of the hospital would show even worse combinations than this last one discovered."

Hospital for Deformities and Joint Diseases. — In the fourth annual report of the Hospital for Deformities and Joint Diseases, a Harlem institution which is located on Madison Avenue just opposite Mount Morris Park, it is stated that, in order to meet the demands made upon its work, the management had purchased the adjoining building, with funds generously furnished by patrons of the hospital. Notwithstanding the interruptions occasioned by the necessary alterations, the clinics were continued, and during the year there was an increase over the preceding year of 470 cases and 8,311 treatments. Twelve beds were added, making a total of 56, and the increased accommodations afforded by the new building have materially relieved the congestion which had previously hampered the hospital and dispensary work. The two buildings have been converted into an English basement, with large balconies running the entire length of the buildings on two floors, thus providing the most perfect fire protection, and, in addition, a means of keeping the patients in the fresh air and sunshine a greater part of the day. There are now over 4,000 square feet devoted to dispensary space, which includes rooms for adult male and female patients, a physical culture room, a Zander room, a large room for massage and electricity for cases of infantile paralysis, five small rooms for the application of plaster casts, and a separate x-ray room for dispensary cases. Although the classes of acute and chronic joint diseases have progressively increased, the greatest field of usefulness of the institution has been in treating disabilities resulting from the epidemics of poliomyelitis in 1907 and the following years. From 50 to 75 sufferers daily have received massage, electricity and muscle education. The benefit derived from the treatment in cases that have existed for one, two or three years has been a matter of pleasant surprise, it is stated, to the attending and consulting staff, as well as to many physicians who have visited the clinics.

## Current Literature.

### Medical Record.

May 20, 1911.

1. Smith, S. *Random Recollections of a Long Medical Life.*
2. Atlee, E. *Uterine Cancer and Its Early Diagnosis. Original Research from Subjective Symptoms.*
3. *Reilly, T. F. *The Prognosis of Lobar Pneumonia.*
4. Stein, J. B. *A Description of a Method for Measuring Easily and Exactly the Dose of the X-Rays in Röntgen Therapy.*
5. Stewart, A. H. *Comparative Longevity of the Sexes.*
6. Wile, U. J. *The Segregation and Education of Children Affected with Ringworm of the Scalp.*
7. Judd, A. *Report of Two Cases of Gastric Ulcer Due to Diseased Gall Bladder and Appendix. Report of a Case of Perforated Gastric Ulcer with Unusual Symptoms.*

3. Reilly makes some interesting observations on the prognosis of lobar pneumonia. In general, he says, it depends on the character of the soil and the virulence of the infection. In addition, there is the consideration that a vital organ is involved. In the epidemic form the infection is very virulent. Pneumonia contracted from another person is highly fatal and when it is contracted by many persons simultaneously, as in a barracks or school, the mortality averages as high as 75%. The earlier in such an epidemic a given case occurs, the worse the prognosis. But, epidemics aside, the most important factor in prognosis is the character of the soil, the age, habits, family history, the condition of the heart and kidneys. The best guide is the behavior of the heart. Any change in the pulse except a slowing is a danger signal. Arrhythmia is especially serious. The character of the pulmonic second sound is a very important index of the patient's condition. [L. D. C.]

### New York Medical Journal.

May 20, 1911.

1. Tyson, J. *A Case of Aneurysm of the Arch of the Aorta.*
2. Stevens, G. T. *A Series of Studies of Nervous Affections in Relation to the Adjustments of the Eyes.*
3. Symmers, D. *Certain Lesions of the Lymph Nodes.*
4. Cyriax, E. F. *Technic of the Manual Treatment of Certain Forms of Ulceration of the Skin.*
5. Cornwall, E. E. *Pick's Syndrome, with Report of a Case.*
6. Shipley, A. E. *Training for Public Health Work.*
7. Floersheim, S. *Causes of Constipation.*
8. Beck, E. *Removal of the Third Digital Phalanx with Formation of a New Joint.*
9. *The Literature of Salvarsan.*

### The Journal of the American Medical Association.

May 20, 1911.

1. *Schamberg, J. F. *Cause of Inflammation of Cranial Nerves after the Use of Salvarsan: A Plea for the Intravenous Method.*
2. Meyer, W. *Impermeable Cardiospasm Successfully Treated by Thoracotomy and Esophagoplication.*
3. Iden, J. H. *Cardiospasm. Report of a Case. Treatment by Operation and Subsequent Dilatation.*
4. *Class, F. M. *Treatment of Cough in the Consumptive.*
5. Coues, W. P. *Meningismus from Active Cervical Adenitis and Peritonsillar Infiltration.*
6. Somers, G. B. *Good and Bad Corsets.*
7. Tennant, C. E. *A New Clamp for End-to-End Intestinal Anastomosis.*
8. Skilton, A. W. *A Case of Meningococcus Septicemia, with Demonstration of the Meningococcus in the Blood Smear.*
9. Castle, H. E. *Venous Anastomosis for Cure of Varicose Veins: Venovenostomy.*
10. Frazier, C. H. *Resuscitation by Cardiac Massage.*
11. King, H. B. *Noma (Cancrum Oris) in an Adult, with Report of a Case.*
12. Karsner, H. T. *Chemistry of Nephritis.*
13. Friedenwald, H. *Classification of Diphtheritic Conjunctivitis. Report of a Case without Membrane Formation.*
14. McLean, A. *Carbon-Monoxide Poisoning Resulting in Gangrene of Both Legs.*
15. *Wright, J. H., and Kinnicutt, R. *A New Method for Counting the Blood Platelets for Clinical Purposes and Some Results Obtained by It.*

1. Schamberg states that inflammation of the optic, auditory, facial and other cranial nerves has developed in a minute percentage of cases after the use of salvarsan in syphilis. The same complications may occur spontaneously in syphilis or after mercury. These inflammations have occurred almost exclusively in cases of recent syphilis. They appear to have occurred exclusively after the intramuscular and subcutaneous injections and not after intravenous administration. Optic and auditory neuritis have in many instances cleared up under a second dose of salvarsan or under mercury or iodides.

4. Class considers that most practitioners err in starting sedative treatment too early in the cough of phthisis. In nearly every case the morning clearing up process is beneficial. Retching is often due to excessive pharyngeal mucus and may be relieved by a simple gargle. A long uvula is often a prime offender. The cough which occurs after eating can be controlled by the smaller, more frequent meal which produces less reflex stomach activity. Cough palliatives are only allowable when the violence and frequency of the cough causes fatigue and prevents sleep.

15. Wright and Kinnicutt describe their new method for counting blood platelets and make the following interesting observations. The general average of platelets per cubic millimeter is about 297,000. In secondary anemia the count is generally high, sometimes as high as 1,130,000, while in pernicious anemia it is always low at some period of the disease. The authors suggest that the platelet count may be of value in distinguishing between the two forms of anemia in doubtful cases. In typhoid fever in the beginning of the disease the platelet count is normal or below normal, but as the disease progresses, their number increases and in convalescence may be very high. In lobar pneumonia during the progress of the disease the count may be low or normal, but at or soon after the crisis it rises very rapidly and reaches a very high point. The results of the authors' observations show that variations in the number of platelets and the number of leucocytes have no constant relation to each other. This is a further evidence that the blood platelets are not derived from the leucocytes, as some writers have believed. [E. H. R.]

BULLETIN OF THE JOHNS HOPKINS HOSPITAL.

MAY, 1911.

1. ROHRER, C. W. G. *Sir Richard Owen: His Life and Works.*
2. BAILEY, P. *A Florentine Anatomist.*
3. MACHT, D. I. *Embryology and Obstetrics in Ancient Hebrew Literature.*
4. *THAYER, W. S. *On Disseminated Caseating Tuberculosis of the Liver.*
5. WARFIELD, L. M. *A Peptid-Splitting Ferment in the Saliva.*
6. GUDERNATSCH, J. F. *The Relationship between the Normal and Pathological Thyroid Gland of Fish.*
7. *CONE, S. M. *Tubercular Bursitis. Two Unusual Cases.*
8. WALKER, G. *A Device to Aid in Keeping the Patient Dry after a Suprapubic Cystostomy.*
9. WELCH, W. H. *In Memoriam: Dr. Christian A. Herter.*

4. Thayer presents in detail the clinical history and autopsy findings of a case of disseminated caseating tuberculosis of the liver with cavity formation. He discusses the diagnosis and differential diagnosis of this rare condition.

7. Cone briefly reviews the work previously done on diseases of the bursæ with special reference to the formation of "fibrin" or "rice" bodies in bursal diseases due to tuberculosis. He then presents two cases of his own of tuberculous bursitis, tuberculin reaction, subcutaneous, positive with mgm. 2 of tuberculin, giving the details of the clinical picture, operation and pathological findings. There are some excellent illustrations. [J. B. H.]

THE JOURNAL OF MEDICAL RESEARCH.

APRIL, 1911.

1. WOLBACH. *A New Type of Cell Inclusion, not Parasitic, Associated with Disseminated Granulomatous Lesions.*
2. WOLBACH AND MCKEE. *The Nature of Trachoma Bodies.*
3. *RETTGER AND SHERRICK. *Studies on Bacterial Variations.*
4. *RIGGS. *A Chemical Study of Human Sweat.*
5. THOMPSON. *Two Cases of Tumor Metastases Involving the Parathyroid Glandules.*
6. SWARTS AND THOMPSON. *Accessory Thyroid Tissue within the Pericardium of the Dog.*
7. DOLLEY. *Studies on the Recuperation of Nerve Cells after Functional Activity from Youth to Senility. No. 1.*
8. *LARRABEE. *A Clinical and Experimental Study of the Hemopoietic Serum of Carnot.*
9. KRAUSE. *Studies in Immunity to Tuberculosis, Hypersensitiveness to Tuberculo-Protein and its Relation to Some Tuberculosis Problems.*
10. KENDALL. *The Biology and Biochemistry of Bacteria and Their Relation to Therapeutics.*
11. MACNIDER. *The Pathological Changes which Develop in the Kidney as a Result of Occlusion by Ligature of One Branch of the Renal Artery. No. 2.*
12. MALLORY. *Chronic Passive Congestion of the Liver.*
13. MALLORY. *Giant-Cell Sarcoma.*

3. Through the use of dilute solutions of the bichloride of mercury, Rettger and Sherrick isolated a strain of highly resistant staphylococcus aureus. This appears as a striking instance of bacterial variation. The weaker strains are killed by the weaker solutions of the disinfectant and the number of strains is shown by a determination of the number of colonies, which decrease as the solution strength increases. Other better-known examples of variation are cited.

4. Riggs has collected sweat from individuals in health and disease by means of a rubber bag, in which the subject is inclosed. A long series of observations shows the constancy of the organic and inorganic content. The high nitrogen output and the low total solids in three nephritic experiments are of especial interest. A further study of such cases is of great importance.

8. Larrabee fails to substantiate the findings of Carnot, who describes in the blood serum of animals suffering from anemia, from hemorrhage, a hemopoietic body, the injection of which causes a marked increase of erythrocytes, even in normal subjects. The author's experiments, upon both animals and man, failed to show any such effect. [L. H. S.]

SURGERY, GYNECOLOGY AND OBSTETRICS.

MAY, 1911.

1. *MEISENBACH, R. O. *Sacro-Iliac Relaxation, with Analysis of Eighty-Four Cases.*
2. CONNELL, F. G. *The Early Diagnosis of Cancer.*
3. *LYNCH, F. W. *The Bradycardia of the Puerperium.*
4. *FRANK, R. T., AND HEIMANN, W. J. *The Placental Theory of Eclampsia. Further Experiments with the Complement-Fixation Test.*
5. *GOODALL, J. R., AND CONN, L. C. *The Relation of the Thyroid Gland to the Female Generative Organs.*
6. SPEED, K. *Complete Sub-Aponeurotic Patellar Fracture.*
7. BELL, W. B. *Primary Abdominal Pregnancy in a Rabbit.*

1. Meisenbach states that the sacro-iliac is a true joint and admits some motion normally. It may be subject to strain or complete subluxation as well as to the diseases which affect other joints. The pelvic girdle is the main support of the trunk and when relaxed either by disease or physiological processes may jeopardize the sacro-iliac joint, causing a loose sacrum or an actual subluxation of the joint. Many of the sciaticas are due to a slipping of the sacro-iliac joint and many of the backaches, especially in women, are caused by sacro-iliac strain. Faulty attitude and flat foot in young and old are predisposing factors.

3. Lynch, studying 103 primiparæ and 82 multiparæ, found the average of the pulse in multiparæ was twice as apt to be slower in the puerperium than to remain at its previous level. In primiparæ it was likely to remain unchanged.

4. Frank and Heimann, experimenting with the complement-fixation test in eclamptic women, fail to find evidence to confirm Fieux and Mauriac, who claim to have discovered in this test a demonstration of a placental toxin and a diagnostic test of pregnancy, and think the test argues against the placental origin of eclampsia.

5. Goodall and Conn conclude that the relation between the female generative organs and the thyroid is very intimate, especially the ovaries and in them the secretions of the interstitial cells. The uterus is devoid of any influence on thyroid activity except in that its function may affect the ovarian function and through this the thyroid. Thyroid activity is in a measure under the governance of ovarian activity. Ovarian hyperactivity is often a cause of the development of exophthalmic goiter. Diminished or absent ovarian activity usually coincides with myxedema. Puberty, menstruation, pregnancy, lactation and menopause exercise a profound influence upon thyroid secretion. Thyroid and ovarian secretion do not supplant, but neutralize each other. [E. H. R.]

## The Lancet.

### April 22, 1911.

1. *Hertz, A. F. *Goulstonian Lectures on the Sensibility of the Alimentary Canal in Health and Disease. Lecture I.*
2. Fremantle, F. E. *Edward Jenner Lecture on the Declining Birth-Rate.*
3. Godlee, R. J., and Williams, G. E. O. *Notes on Some Victims of a Recent Railway Accident, with Special Reference to Cerebral Fat-Embolism.*
4. Taylor, J. *Some Ocular and Visual Conditions in Medical Cases.*
5. Tilley, H. *Direct Bronchoscopy. Two Cases Indicating the Value of this Method for the Detection and Removal of Foreign Bodies Impacted in the Lower Air Passages.*
6. Webb, J. C. *The Value of Ionization in Inflammatory Diseases of the Lower Bowel.*
7. *Stoney, R. A., and Moorhead, T. G. *Ascites Treated by Lymphangioplasty.*
8. Milne, R. *Measles: Its Treatment and Prevention.*
9. Gillespie, E. *A Case of Acute Hemorrhagic Pancreatitis; Operation; Recovery.*
10. Rae, J. *An Unusual Case of Pericardial Effusion.*

1. Hertz, in the first of the Goulstonian Lectures, considers the sensibility of the alimentary tract under the following headings: (1) Tactile sensibility. (2) Thermal sensibility. (3) Sensation produced by chemical stimulation. (4) The sensation of fullness and distention.

7. Stoney reports the details of a case of ascites due to chronic fibrous peritonitis, with hepatic cirrhosis, treated by lymphangioplasty with marked benefit. [J. B. H.]

### April 29, 1911.

1. *Tuck, G. L. *Inaugural Address on Plague.*
2. *Hertz, A. F. *Goulstonian Lectures on the Sensibility of the Alimentary Canal in Health and Disease. Lecture II.*
3. *Dawson, B. *The Microbic Factor in Gastro-Intestinal Disease and Its Treatment.*
4. *Chapple, H. *A Consideration of Some Cases of Advanced Tubercular Joints Treated by Ileo-Colostomy.*
5. Stratford, E. P. *A Case of Lymphadenoma in a Woman Aged Sixty-Three Years.*
6. Martin, L. C. *Two Interesting Cases of Acute Intussusception and Appendicitis.*
7. Gray, G. D. *A Report on the Septicemic and Pneumonic Plague Outbreak in Manchuria and North China (Autumn, 1910.–Spring, 1911).*

1. Tuck describes interestingly the recent plague epidemic in China, dwelling on its relation to the marmot as a spreader of the disease, the progress of the epidemic and the methods of quarantine and disposal of the dead.

2. In the second of the Goulstonian Lectures on the sensibility of the intestinal tract, Hertz dwells on the sensation of fullness and distention, the sensation of emptiness and hunger and pain.

3. Dawson believes that in various chronic disorders of the gastro-intestinal tract there is an actual infection of the mucosa by various bacterial organisms just as there is in cystitis and bronchitis. He describes his experiments on this subject, the results of his investigations and the relation of hydrochloric acid to the growth of bacteria. He discusses the relationship between appendicitis, colitis and infections of the biliary tract and gastric disturbances. He mentions the well-known bearing of carious teeth on gastric disorders. He gives the details of several cases of chronic gastric disorders in which the patient was treated with an autogenous vaccine obtained from a growth from the stomach contents with beneficial results.

4. Chapple believes that constipation and the attendant auto-intoxication is a large factor in the resistance to treatment of many tuberculous joints. Accordingly, he has performed an iliocolostomy on such patients, following the lead of Lane. He gives the details of eight cases each under twelve years, in which marked benefit to the joint condition followed this operation. [J. B. H.]

## British Medical Journal.

### April 29, 1911.

1. Cameron, H. C. *Clinical Illustrations of the Persistence of Disease Germs in the Human Body.*
2. *Hutchinson, J. *Salvarsan ("606") and Arsenic Cancer.*
3. Shaw, L. E. *Remarks on the Place of the Hospital in a Civilized Community.*
4. *Box, C. R. *The Syphilitic Factor in the Hemiplegias and Diplegias of Infancy and Childhood.*
5. Riddell, J. R. *The "X"-Rays in Treatment.*
6. Patterson, N. *Extensive Venous Infection Complicating Middle-Ear Disease; Thoracic Empyema; Recovery.*
7. Luke, T. D. *Three Cases of Malignant Disease of the Spine.*
8. Parry, L. A. *Some Cases under the Workmen's Compensation Act and Others of Medico-Legal Interest.*
9. Armstrong, W. *Radium Water Therapy.*

2. Hutchinson believes that he has demonstrated from a long and extended experience with arsenic as a remedy for various affections of skin, nerves and blood that not only does ordinary herpes zoster frequently follow its use, but that a definite proclivity towards cancer is developed in the human body by its prolonged use. In view of this widespread extolling of "606" at the present time, he emphasizes this fact.

4. Box presents eleven cases of hemiplegia, diplegia, and diffuse cerebral sclerosis in children and discusses the part which syphilis may play in their etiology. [J. B. H.]

## The Practitioner.

### May, 1911.

1. *Powell, R. D. *On Mediastinal Growths.*
2. *Clarke, W. B. *Some Anomalous and Obscure Symptoms Associated with Movable Kidney.*
3. Simpson, W. J. *Plague in Northern China.*
4. Bishop, E. S. *Appendicitis.*
5. *Corner, E. M. *A Review of Some Methods of Gastrostomy.*
6. *Walker, J. W. T. *Acute Pyelitis, Pyelonephritis, Suppurative Nephritis.*
7. Colbeck, E. H. *The Mode of Production of Apparent or Simulated Doubling of the Second Sound of the Heart.*
8. Ashby, H. T. *Edema Occurring in the Course of Disease of the Gastro-Intestinal Tract in Infants.*
9. *Williamson, O. K. *Some Observations on the Use of Guipsine as an Appressor Remedy in Cases of High Arterial Blood Pressure.*
10. *Hernaman-Johnson, F. *Modern Views on the Causation and Treatment of Mucous Colitis.*
11. Gordon, A. K. *Some Points in the Diagnosis of Scarlet Fever.*
12. Jones, J. A. *Some Practical Points in the Diagnosis and Treatment of Acute Suppuration in the Frontal, Maxillary and Anterior Ethmoidal Sinuses, with Illustrative Cases.*

13. COWEN, I. *A Case of Retained Menses.*
14. COTTON, W. *The Fluoroscopic Diagnosis of Direction by a Plane Mirror upon the Screen.*

1. Powell, in a short paper, briefly discusses mediastinal growths in general and presents two illustrative cases.

2. Clarke discusses five cases of movable kidney, each of which presented some obscure and unusual symptoms and especially symptoms which led to the suspicion of gall bladder or pyloric trouble.

5. Corner, in an article illustrated with numerous diagrams and photographs, discusses the various methods of gastrostomy. The unsatisfactory results so often met with are, in his opinion, due to (1) inanition and exhaustion of the patient, and (2) an imperfect method of operation. He discusses and describes the various valve operations as practiced to-day and gives the details of a method of his own, with results and illustrative cases.

6. Walker discusses at length the various forms of pyelitis and suppurative nephritis as to nomenclature, clinical features, prodromal symptoms, after-history and pathology. He goes at length into the question as to whether or not an ascending infection is possible and compares it with hematogenous infection and discusses briefly treatment.

9. Williamson believes that in guipsine, a drug obtained from mistletoe, the physician possesses an effective and safe remedy for the treatment of cases of supernormal arterial pressure. He describes an elaborate series of investigations on the use of this drug. The guipsine pills (5 cgm. each) were given in amounts varying from six to twenty-five in the twenty-four hours.

10. Hernaman-Johnson discusses in a general way the various methods now in vogue of treating mucous colitis. [J. B. H.]

## EDINBURGH MEDICAL JOURNAL.

### MAY, 1911.

1. *WILKIE, D. P. D. *Retrograde Venous Embolism as a Cause of Acute Gastric and Duodenal Ulcer.*
2. MARSHALL, D. G. *Some Interesting Cases of Tropical Diseases Seen in Edinburgh during 1910.*
3. BEARD, J. *Outbreak of Typhus Fever in the City of Carlisle.*
4. SMITH, G. M. C. *Heredity as a Causative Factor in Disease.*

1. Wilkie, in an excellent article admirably illustrated, discusses at length retrograde venous embolism and its relation to gastric ulcer. He summarizes his investigation as follows: (1) Thrombosis of omental veins is readily produced by mechanical, thermal and bacterial agencies. (2) From thrombosed omental veins emboli may frequently separate, probably owing to the periodic vasodilation and contraction of these veins associated with the ingestion of food. (3) Emboli from omental veins may, under certain circumstances, be carried by gastric veins and become impacted in the venous plexus of the submucous coat of the stomach and form a gastric ulcer. He further goes on to suggest that: (1) The hematemesis sometimes met with in cases of acute appendicitis is due to an acute gastric ulcer resulting from blockage of a gastric vein by a septic embolus from a thrombosed omental vein. (2) On similar lines the omental vessels may form the connecting link in the association of chronic gastric or duodenal ulcer with an inflammatory process in the lower abdomen. (3) The same theory may possibly explain some cases of acute pancreatitis brought about by septic emboli from an inflamed omentum. [J. B. H.]

## BERLINER KLINISCHE WOCHENSCHRIFT. No. 16.

### APRIL 17, 1911.

1. HAIKE AND WECHSELMAN. *Curative and Secondary Effects of Salvarsan on the Ears.*
2. WEICHERT, M. *The Stern Modification of the Wassermann Reaction on Six Hundred Cases in Comparison with the Wassermann Test.*
3. KAHN, J. *One Hundred Examinations with the v. Dungern-Hirschfeld Modification of the Wassermann Reaction.*
4. EHRENBERG, L. *The Peptone-Splitting Capacity of the Gastric Contents, and the Uncertainty of the Von Neubauer and Fisher Specific Ferment Diagnosis.*
5. MAYER, P. *The Pathogenesis and Therapy of Gallstone Disease.*
6. MEYER, L. *A Contribution to the Knowledge of Acute Perforative Appendicitis as the Content of a Strangulated Inguinal Hernia.*
7. LOEWENSTEIN, J. *The Treatment of Progressive Paralysis with the Injection of Nucleinic Acid.*
8. GARCEAU, E. *A Cystoscope for Ureteral Catheterization with a Large Diameter.*
9. TULD, E. *The Auditory Hydrochloric Acid Test by Means of Sodium, and Its Relation to the Effervescence Test of N. A. Benedict, of Buffalo.*
10. BOAS, I. *Critical Remarks on the Article of Dr. Pochhammer, "Contributions on Gastric Resection."*
11. POCHHAMMER, C. *Reply to the Critical Remarks of Dr. Boas to My Paper on Gastric Resection.*

## No. 17. APRIL 24, 1911.

1. LANE, W. A. *Clinical Lecture on the Loops which Develop in Our Gastro-Intestinal Tract in Chronic Constipation.*
2. CHAPPLE, H. *Chronic Constipation Treated by Means of Short-Circuiting the Lower Bowel or Colectomy.*
3. BOSSE, P. *Contribution to the Technic of the Intraperitoneal Cecum Operation.*
4. v. OETTINGER, W. *Remarks on the Indication, Technic and After Treatment of Linear Amputation.*
5. CASSIER, R., AND MÜHSAM, R. *The Extirpation of a Large Angioma of the Brain.*
6. *MARKUS, N. *The Treatment of Pyelitis Graviderum.*
7. KUTSCHER, K. H. *A Research on Hand Disinfection with "Chiralfol."*
8. *FRAENKEL, M. *The Röntgen Rays in Gynecology.*
9. KATZ. *The Operative Contract.*

6. The author, believing that the cause of pyelitis gravidarum being a tipping to one side of the pregnant uterus, causing pressure on, and a consequent backing up in, the ureters and so to the kidney, recommends that the patient be made to lie as much as possible on the opposite side, the intention of course being to remove the pressure from the ureter. This, combined with simple urinary antiseptics, he has found to work well in a number of cases of pyelitis of pregnancy. He cites cases of other men, as well as his own, to prove his contention.

8. The author has collected from the literature (mainly German), reports of series of cases, such as fibroids of the uterus, dysmenorrhea, menorrhagia, metrorrhagia, various sexual neurasthenias, and also a series of inoperable carcinomas of the uterus, which have been treated by means of the x-ray. The reports are all enthusiastic, and the author makes great claims, especially for fibroids, which are said to melt away with amazing rapidity. He claims that no damage is done the ovaries if the dosage is regulated carefully, citing animal experimentation as well as clinical results to show this. He ends his paper with the remark that there is a tremendous future for the x-ray in gynecology. [J. B. S., JR.]

## DEUTSCHE ZEITSCHRIFT FÜR CHIRURGIE. BD. 109.

### HEFT. 3–4. APRIL, 1911.

1. LEVY, R. *Contributions to the Question of Coxitis, Coxa Vara and So-Called Osteo-Arthritis Deformans Juvenilis.*
2. *PLESSNER, M. *Villous Cancer of the Thyroid Gland.*
3. EXNER, A. *The Knowledge of the Etiology of Inflammatory Rectal Stenoses.*
4. *SCHLEINZER, J. *Lymphosarcoma of the Tongue: A Contribution to the Permanent Cure of Lymphosarcoma.*
5. ARZT, L. *The Knowledge of Dermoid Tumors of the Pelvic Connective Tissue.*
6. *HARTEL, F. *Gastro-Enterostomy in the Röntgen-Ray Picture.*
7. DOEPFNER, K. *Contributions to the Knowledge of Meckel's Diverticulum.*

8. Karewski. *Brief Remarks on the Paper of L. Heidenhain on "The Covering in of Large Defects of the Skin following Extensive Breast Amputations."*
9. Thöle. *Volvulus after Eventration and Reposition of the Bowel under Opium.*
10. Thöle. *Peritonitis of Idiopathic Origin.*

2. The author reviews the literature on the subject of cancer of the thyroid, remarking on the infrequency of the cases reported. He then gives a careful summary of Langhans' classification of malignant tumors of the thyroid (seven in number). Following this he reports at great length a case of his own of papillary cyst adenoma of the thyroid, accompanied by three excellent microphotographs of the tumor, and from the literature he selects other cases, similar to his own. He thinks that these cases which Langhans grouped sixth in his classification simply as papillomas should receive a separate classification because of their extremely malignant tendency to recur, and to metastasize both through the blood and the lymph streams. He does not think that Langhans considers sufficiently the malignant tendency when simply grouped under "papillomas."

4. The author reviews the literature of this extremely rare form of sarcoma, and reports a case of his own which was operated on five years ago and has had only one small recurrence, and that about two months after the original operation. The case is now well. He analyzes a number of the cases which have been reported in the literature. The latter part of his title is somewhat misleading, as he has nothing to offer but free and radical excision.

6. This article is a long and careful study of twenty-two cases of gastro-enterostomy, most of which were done for ulcers of the duodenum, or for the stomach. For any one interested in the surgery of the stomach, the article is well worth reading. Each case is analyzed with the extremest care, and there is a large number of semi-diagrammatic pictures of each case, made with the x-rays, showing just exactly what is taking place from two to three hours up to one and a half years following the operation. The article is well worth while. [J. B. S., Jr.]

## Obituary.

### JOHN TATHAM THOMPSON, M.B., C.M., EDIN.

Dr. John Tatham Thompson, who died of gastric carcinoma on April 28, at Cardiff, South Wales, was born at York, England, in 1858. After graduating from University College, Bristol, he studied pharmacy for a time, but subsequently took a medical degree at the University of Edinburgh, where he was a pupil of the late Dr. Argyll Robertson. In 1887 he settled at Cardiff in the practice of ophthalmology and was almost immediately appointed ophthalmic surgeon at the Cardiff Infirmary and surgeon-oculist to the South Wales Institute for the Blind. He was an operator of great technical skill, an excellent artist and a man of energy and originality. He contributed much to the medical literature of his specialty, and became one of the foremost of the younger British ophthalmologists. He devised a modification of the usual operation for anterior staphyloma, and was one of the first to employ the electro-magnet successfully for the removal of steel fragments from the retina. He was author of "The Influence of Early School Life in Eyesight," and made valuable contributions on the pathogenesis of miner's nystagmus. The suffering of his last illness he endured with the greatest fortitude and resignation, and the regret only that he must leave his work so soon. He is survived by his widow and by four children.

## Miscellany.

### RECENT BEQUESTS IN PUBLIC MEDICAL CHARITY.

During the past week an unusually large number of bequests to public charitable and medical institutions in and about Boston has been announced.

The will of the late Samuel Hubbard Scudder, of Cambridge, Mass., who died on May 17, was filed on May 27 in the Middlesex Probate Court. It provides that on the death of a private beneficiary, the sum of $23,000 shall revert to Harvard University to be used for the benefit of the Harvard Medical School.

The will of the late Mrs. Lydia Augusta Barnard, of Milton, Mass., which was filed for probate at Dedham, Mass., last week, contains bequests of $5,000 each to the Sharon Sanatorium, to the Channing Home, Boston, and to the New England Hospital for Women and Children, Roxbury.

The will of the late J. Francis Loring, of Arlington, Mass., who died on May 14, was filed last week for probate in the Middlesex Probate Court at East Cambridge, Mass. It contains a bequest of $100 to the New England Baptist Hospital.

The will of the late James Farrell, of Boston, who died on May 18, was filed for probate in this city last week. It contains bequests of $500 each to the Carney Hospital, South Boston; to St. Elizabeth's Hospital, Boston; to the Holy Ghost Hospital for Incurables, Cambridge, Mass., and to St. Mary's Infant Asylum, Dorchester.

The will of the late Mrs. Henry R. Shaw, of Boston, who died on May 21, was filed for probate last week. It provides that, in the event of the intestate death of the principal beneficiary before the age of twenty-five years, one sixth of the residuary estate shall revert to the Industrial School for Crippled and Deformed Children, Boston.

The will of the late Mrs. Josiah Parsons Cooke, who died at Cambridge, Mass., on May 21, was filed for probate at East Cambridge on May 24. It contains an immediate bequest of $5,000 to the Cambridge Hospital, for the endowment of a free bed in the women's ward, in memory of the testatrix's father, the late Dr. Elisha Huntington, of Lowell, Mass. It further provides that on the death or remarriage of a beneficiary, a further sum of $5,000 shall revert to the same institution.

These legacies are examples of the manner in which the permanent endowment of worthy medical charity is gradually established in our community by the generosity of private individuals.

### ANTITYPHOID VACCINATION FOR BENEFICIARIES OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

In the weekly report of the United States Public Health and Marine-Hospital Service for May 19 is announced the offer of free antityphoid vaccination to all beneficiaries of the service. These include persons employed on board in the

care, preservation or navigation of any registered, enrolled or licensed vessel of the United States, the officers and crews of the Revenue Cutter Service, and of the Lighthouse Establishment, seamen employed on the vessels of the Mississippi River Commission and of the Engineer Corps of the Army, keepers and crews of the United States Life-Saving Service, and officers and seamen on vessels of the Coast and Geodetic Survey. The circular letter of instruction, which contains this announcement, states that "although the taking of the treatment will be voluntary, some beneficiaries will undoubtedly take advantage of this offer, and by so doing protect not only the traveling public which they serve, but the general public whose water supplies they are liable to infect."

## ARMY MEDICAL CORPS EXAMINATIONS.

THE Surgeon-General of the army announces that preliminary examinations for the appointment of first lieutenants in the Army Medical Corps will be held on July 10, 1911, and Sept. 5, 1911, at points to be hereafter designated.

Full information concerning these examinations can be procured upon application to the "Surgeon-General, U. S. Army, Washington, D. C." The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training after graduation.

In order to perfect all necessary arrangements for the examination, applications must be complete and in possession of the Adjutant-General at least three weeks before the date of examinations. Early attention is, therefore, enjoined upon all intending applicants. There are at present sixty-one vacancies in the Medical Corps of the Army.

## Correspondence.

### USE OF THE INCUBATOR IN STUDY OF EMBRYOLOGY.

BOSTON, May 26, 1911.

*Mr. Editor:* That the study of embryology by the use of the incubator is of no modern date is evident from the quotation given below from a work by the famous Sir Kenelm Digby, entitled, "*Two Treatises: In the one of which The Nature of Bodies In the other The Nature of Man's Soul is looked into In way of Discovery of the Immortality of Reasonable Souls, London, MDCLXV.*" The first edition was published in Paris in 1644. The work is a bulky volume, 429 pages being devoted to the body and 144 pages to the soul.

The quotation referred to is as follows: "Sir John Heydon (that generous and knowing gentleman, and consummate souldier, both in theory and practice) was the first that instructed me how to do this, by means of a furnace so made as to imitate the warmth of a sitting hen. In which you lay several eggs to hatch: and by breaking them at several ages, you may distinctly observe every hourly mutation in them, if you please."

Very truly yours,

CHARLES G. CUMSTON, M.D.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MAY 20, 1911.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | 1,557 | 458 | Waltham | 3 | 1 |
| Chicago | 710 | 214 | Brookline | 8 | 1 |
| Philadelphia | — | — | Chicopee | 3 | 2 |
| St. Louis | — | — | Gloucester | 8 | 1 |
| Baltimore | — | — | Medford | 6 | 2 |
| Cleveland | — | — | North Adams | 6 | 3 |
| Buffalo | — | — | Northampton | 3 | 0 |
| Pittsburg | — | — | Beverly | 0 | — |
| Cincinnati | — | — | Revere | 2 | 1 |
| Milwaukee | — | — | Leominster | 3 | 1 |
| Washington | — | — | Attleboro | 1 | 0 |
| Providence | — | — | Westfield | 7 | 1 |
| Boston | 231 | 61 | Peabody | — | — |
| Worcester | 40 | 10 | Melrose | 5 | 0 |
| Fall River | 48 | 28 | Hyde Park | 3 | 1 |
| Lowell | 29 | 6 | Woburn | 4 | 0 |
| Cambridge | 36 | 5 | Newburyport | 2 | — |
| New Bedford | 29 | 14 | Gardner | 5 | 2 |
| Lynn | 30 | 5 | Marlboro | 7 | 1 |
| Springfield | 30 | 6 | Clinton | 2 | — |
| Lawrence | 24 | 13 | Milford | — | — |
| Somerville | 20 | 5 | Adams | 2 | 1 |
| Holyoke | 13 | 3 | Framingham | — | — |
| Brockton | 11 | 4 | Weymouth | — | — |
| Malden | 14 | 5 | Watertown | 1 | 0 |
| Haverhill | 11 | — | Southbridge | 3 | 1 |
| Salem | 14 | 4 | Plymouth | — | — |
| Newton | 10 | 3 | Webster | 1 | 0 |
| Fitchburg | — | — | Methuen | — | — |
| Taunton | 8 | 1 | Wakefield | 5 | — |
| Everett | 10 | 3 | Arlington | — | — |
| Quincy | — | — | Greenfield | 7 | 2 |
| Chelsea | 15 | 5 | Winthrop | 1 | — |
| Pittsfield | 13 | 3 | | | |

## SOCIETY NOTICES.

RHODE ISLAND MEDICAL SOCIETY. — The annual meeting is to be held at four o'clock P.M., Thursday, June 1, 1911, in the State Normal School Building, Providence, R. I.

SECRETARY OF AMERICAN SURGICAL ASSOCIATION. — The Secretary of the American Surgical Association is Dr. Robert G. Le Conte, of Philadelphia.

## RECENT DEATHS.

WILLIAM PERRY HAGER, M.D., M.M.S.S., died at Northampton, May 18, 1911, aged thirty-six years.

DR. E. ARTHUR DAKIN, who died last week at Gloucester, Mass., was born in Lower Argyle, N. S., in 1853. He was at first a pharmacist, but subsequently practiced medicine for a number of years at Magnolia, Mass.

DR. ALBERT H. HAYES, of Boston, died suddenly in this city on May 22. He was born in 1837 at Alton, N. H.

DR. HENRY C. PRENTISS, of Somerville, Mass., died in that city on May 26, at the age of ninety-seven years.

## BOOKS AND PAMPHLETS RECEIVED.

Treasury Department, Public Health Bulletin No. 43. I. Studies upon Plague in Ground Squirrels. II. A Plague-Like Disease of Rodents. By George W. McCoy.

Galvanotropic Orientation in Gonium Pectorale. By A. R. Moore and T. H. Goodspeed. University of California Publications in Physiology.

On a Possible Source of the Biological Individuality of the Tissues and Tissue-Fluids of Animal Species. By T. Brailsford Robertson. University of California Publications in Physiology.

## Original Articles.

# THE CLASSIFICATION OF DIABETES MELLITUS.

BY A. E. AUSTIN, M.D.,

*Physician to Mount Sinai Hospital and Director of its Clinical Chemistry Laboratory.*

A HOST of difficulties has been presented to the clinician in gauging the varied severity of this disease; we see all grades from the mild form which can be controlled by merely eliminating sugar from the diet to that form in which absolute fasting does not free the urine from sugar. The reason for this is, of course, twofold; first, because each individual afflicted with this disease has a constantly varying power of utilizing or oxidizing that portion of carbohydrate which is given him, a power which even in the individual may remain constant, may vary from day to day or sometimes from hour to hour of the same day; for instance, Von Noorden has found that some patients can tolerate carbohydrates better in the afternoon and evening that in the morning on an empty stomach, while others can take the total amount allowed in one meal rather than distribute it over the period of three meals. Secondly, we have to take into account the origin of dextrose from protein food, a fact which becomes startling when we realize that while from the protein richest in carbohydrate mucin, by laboratory means we can obtain only 25 to 35%, from egg albumen 10 to 15% and from meat less than 1% of sugar, the body in its process of metabolism can produce approximately 60% of the protein ingested in the form of dextrose, according to Lusk, where carbohydrate tolerance is nil. It seems a matter of indifference to the body in such cases whether the protein is taken as food or obtained from the body itself. Another curiosity of diabetic metabolism is that while by laboratory methods it is impossible to obtain any dextrose from casein, this very protein furnishes sugar most abundantly when taken as food. It is possible and probable that the energetic means taken to split off the carbohydrate molecule from protein (cooking with strong acid) destroys the sugar thus separated, as the latter is known to be very susceptible to these agencies, as note the destruction of dextrose in the Moore test for diabetic urine where alkali is used with heat. In the body the ratio of protein ingested or metabolized to the dextrose eliminated remains usually as 62:5::3:65 in severe cases. In fact, it is sometimes found that the severest forms of diabetes tolerate a small amount of carbohydrate better than a very large amount of protein food. How, then, if carbohydrate is not performed in the protein molecule, can the body manufacture it? It seems decidedly more difficult than the transmutation of baser metals into gold. From alanin or aminopropionic acid, however, an amino-acid, one of the many final digestive products of protein, it requires only the separation of the amin body or $NH_2$ factor, which is promptly converted into urea or an organic acid ammoniate, the oxidation of the propionic acid to lactic acid, $C_3H_6O_3$, and the union of two of these latter molecules in the liver to form dextrose, $C_6H_{12}O_6$. Of course, the matter is not as simple as this would imply, but such an illustration shows how other similarly formed amino-acids may be synthesized to form glucose. As to fat, the proof is still lacking that any portion of the fat, other than the glycerine, forms sugar. This glycerine, especially in the form of the aldehyde, has been proved to be converted to sugar by Woodyat; as to the conversion of the higher acid constituents of fat, we are still in as much doubt as ever. Lusk declares that there is no proof of this conversion, while Von Noorden is inclined to believe that cases may become so severe that the individual may eliminate an amount of sugar much beyond the quantity stated by Lusk as being derived from 6.25 gm. of protein, namely, 3.65 gm. of sugar. Hence, the only source remaining must be the fatty acids, since the glycerine of the fat could not account for it; for all practical purposes, however, we we may rely upon the carbohydrates and the protein taken as food (and existing in the body) as the sources of sugar. It seemed formerly that the classification must be based upon the organ which was apparently affected; that is, mild cases of glycosuria exsaccharo must be dependent wholly upon the inability of the liver and muscles to store up more than a certain portion of the carbohydrate taken at a meal, as glycogen, and hence the excess beyond the .3 % or .1 %, as Von Noorden would have it, permissible in the blood was eliminated; on this account hepatic glycosuria was a common term, with which was also allied the glycosuria of the obese, on the theory that the liver was associated in the conversion of carbohydrates to fat and that it had failed in its function. Then we gradually traced this hepatogenous glycosuria to nervous influence and thus explained the action of brain tumors, traumatism, apoplexy and carbon monoxide poisoning in the production of glycosuria; but in every case of this character the glycosuria did not occur unless there was glycogen stored up; in other words, glycosuria could not be produced in a fasting subject by these means and in the well-fed usually ceased as soon as the stored-up animal starch was exhausted. After the discovery was made that phloridzin and possibly caffein were able to produce glycosuria, we began to hear of a renal form which arose from the lessened resistance of the renal cells to the usual sugar content of the blood; under such circumstances, in contradistinction to usual diabetes, an impoverishment of sugar in the circulating blood does occur, but it has been found in true diabetes that the renal cells by a process of adaptation offer still greater resistance to the passage of sugar than usual, so that the blood of diabetics only after prolonged continuation of the disease always contain a larger amount of sugar than the non-diabetics, therefore, a true renal diabetes does not exist. When Minkowski found by removal of the pancreas that

a prolonged and fatal diabetes occurred, we congratulated ourselves that now we had found its cause and coined the word "pancreatic diabetes"; repeated pathological examinations of the pancreas of those dying from true diabetes have shown, however, that while that organ may be diseased in many instances, it is not so invariably, so that this classification has no value clinically. The pituitary and adrenal diabetes, words signifying the possible causation of persistent glycosuria, are as yet only curiosities and have not been sufficiently investigated clinically to be granted much of a hearing; we only know that acromegaly and Addison's disease are often accompanied by glycosuria without evidence of their common cause except Herter's proof that adrenalin injected or painted upon the pancreas or even mild mechanical injury to the adrenals themselves *in vivo* may produce glycosuria. Then, if we cannot make an anatomical classification of diabetes, and we have seen how often two organs are associated in the production of glycosuria, for instance, brain and liver, and thyroid and pancreas, we must look for some common ground which exists in all forms of diabetes, and we find that in the limited ability of the organism to utilize carbohydrates; this power in all probability is never fully lost; even in these instances where apparently all the carbohydrate taken is found in the urine and much more even, from the protein food, we can only say that the nitrogen-dextrose ratio remains fairly constant, but we cannot say that the disordered organism may not produce even more than 60% of dextrose from protein and burn up a portion of it since in no way by laboratory methods can we, as stated, learn the exact amount of dextrose contained in the protein molecule, nor are we assured even in these severe cases that all the carbohydrate taken appears in the urine since its glucose is made up of these two factors, carbohydrate taken as food and dextrose obtained from protein either in the food or from the body.

Thus we must make a valuation of the diabetic as we would any damaged machine; what is its output as compared with an undamaged machine 90%, 80% or 70% or less of efficiency? As the normal human can utilize 100% of the carbohydrate taken, especially in the form of starch (sugar tolerance is omitted because so variable) we have only to deduct the urinary glucose from the absolute carbohydrate intake and compare this difference with the latter to determine the efficacy of the body as a sugar-destroying agency. If, on the contrary, all the carbohydrate taken is found in the urine, we have only to determine the nitrogen of the protein food taken, which can be easily done by reference to Atwater's tables or practically any work on dietetics; multiply this by 3.65 according to Lusk, or 4 according to German authors, and deduct from this, in case no carbohydrate has been taken, the urinary glucose. Then compare this latter difference with the total possible glucose to be derived from the protein. This percentage of efficacy to oxidize dextrose will, of course, vary in the same individual as his tolerance increases or diminishes, but will inevitably distinguish the grades in the diabetic process better than the terms "mild," "moderate" and "severe," terms whose meaning varies with the different authorities; as well use the terms "mild," "moderate" and "severe" fever, when we have the clinical thermometer before us. This method of grading diabetics enforces two things,—the weighing of the cooked food and the accurate estimation of sugar in the urine, not the percentage only, for the latter has been the source of innumerable errors in determining the progress of the disease. As the presence of sugar in the urine also stimulates the kidney to a greater elimination of water, so its diminution causes a lessened diuresis and often the latter precedes the former so that the percentage of sugar increases while the day's total is less and really the patient is improving while the percentage indicates that his condition is becoming worse. In order to illustrate this estimation of the oxidative power of diabetics, a few cases are included in this paper.

E. A. Jan. 30. Male, thirty-eight years. Weight 145 lb. No marked change in weight for several years, no thirst, no itching, not conscious of increase of urine, skin soft. Sugar was first discovered in the urine within six months in a life insurance examination. Upon being compelled to fast twenty-four hours, no sugar was found in the urine.

Feb. 12. Having been placed on a Von Noorden antidiabetic diet since the last date, with the addition of 120 gm. of bread, the urine amounted to 1500 ccm. for the day with 12 gm. of dextrose.

Feb. 23. With the same diet and 60 gm. of bread, 1060 ccm. of urine were passed with 4.24 gm. of dextrose.

March 2. Upon the same diet with the same amount of bread, 1900 ccm. of urine were passed with 2.15 gm. of dextrose.

March 5, on the same diet, a mere trace of dextrose not measurable was found. This was followed by a two weeks' stay in Bermuda, during which sea bathing was daily indulged in; after this on a return to regular diet from which sugar alone, i. e., not starch, was excluded there was not the slightest trace of sugar in the urine. Here the 120 gm. of bread containing 72 gm. of carbohydrate produced 24 gm. of urinary sugar, therefore, utilization amounted to 66%, that is, this was the amount, as compared with the total, which did not appear in the urine as there was no sugar when fasting. At the second examination 60 gm. of bread with 36 gm. of carbohydrate produced 4.24 gm. of sugar, a utilization of 88%. March 2, as can be seen, on the same diet this eliminated sugar had diminished to 2.15 gm., while 94% was utilized; for convenience sake, it is well to designate these positive utilizations with + to indicate that the protein food does not apparently share in the urinary sugar, leaving the designation — for those cases where apparently no carbohydrate of the food is oxidized and the supply comes wholly from the protein, so that in this instance we began with the utilization factor of + 66% and closed with one of + 94%, which gradually increased to + 100. In the meantime the treatment was wholly dietary with the exception of antipyrine in 0.3 gm. doses three times a day, to which I attribute but little efficacy apart from diet.

Mr. J. J. D., Nov. 2. Paternal uncle died of diabetes and a sister now has it. Afflicted for ten years. The patient has an enlarged prostate and is disturbed only by thirst and frequent micturition with sometimes involuntary passage of urine in sleep. On unrestricted diet the amount of urine was 4750 ccm. with 1.1% dextrose or 55 gm. in twenty-four hours. No diacetic acid.

Nov. 20. From last date Von Noorden carbohydrate free diet with addition of 100 gm. of bread. The day's urine amounted to 3750 ccm. with 7.5 gm. of dextrose.

Dec. 12. On the same diet 3000 ccm. urine were passed with absolutely no glucose. The only drugs were aspirin 2 gm. daily during the first period and codeine phos. 0.12 gm. daily during the second period. Here regarding the bread as containing 60% of carbohydrates we have a utilization factor of + 87.5% and apparently a very mild form of this disease, though it had existed for a long time. The removal of the sugar from the urine did not, however, proportionately reduce the volume of urine, and it had occurred to me, though in a cursory examination of the literature I could find no evidence for that view, that there may be an association between these milder forms of glycosuria and diabetes insipidus.

Mrs. G., sixty-seven years. Began to have cough two years ago for which went South. About one year ago sugar was found in the urine. At present, excessive cough, sleeplessness, no great thirst, profuse expectoration which is not offensive in odor. Dullness over upper right lung extending half way from clavicle to nipple in front, bronchial respiration, increased voice sounds and abundant moist râles over the same area. Left lung, normal respiration and resonance. Examination of sputum shows tubercle bacilli. On a strict protein-fat diet with the addition of 120 gm. of white bread for a period of two weeks the twenty-four hours amount of urine was 1600 ccm. with 16 gm. of sugar. There was no albumen, no diacetic acid and no acetone. The ammonia nitrogen by the Henrique's process was 6% of the total nitrogen. Regarding the bread as containing 60% carbohydrate, we have 72 gm. of the latter with a loss of 22% or a utilization factor of + 88%. On account of the phthisis, it was not considered advisable to reduce the carbohydrate lower in an effort to render the patient sugar-free, though both Naunyn and Umber quote cases where this was done with benefit to the phthisical process. Their patients, however, were much younger. When, as in these cases, the loss of sugar in the urine is only a small percentage of that taken in the food, it is probable that the balance is utilized either by direct oxidation or stored up as glycogen or fat and the protein constituents of either the body or the food are spared a prostitution of their uses to that of production of carbohydrate. Therefore we regard this utilization as + because, though the normal stage is not reached, yet a fairly good degree of combustion in maintained; furthermore, we see how toleration increases with rest of the sugar destroying function; in other words, "no cross, no crown." Patients must submit to deprivation of carbohydrates for a time in order to be rewarded by restoration of this class of food. This applies, of course, to plus or positive power of utilization. This classification also may correspond to the mild cases of various authors, but the degree of mildness may vary from + 1 to almost + 100% of combustion. There may be and probably are, as Von Noorden states, special idiosyncrasies in regard to the character of the carbohydrate employed, whether potato, bread, fruit or milk and also with reference to the time of the day at which it is taken, and observations of such individual peculiarities are very properly the function of sanatoria and hospitals, but for home treatment certain definite rules of diet, as simple as possible, must be adhered to and too many variations confuse the patient and the attendant, while the established diet of Von Noorden and Naunyn, especially of the latter, which offers varied ménus without starch or sugar for every day in the week, and to which a definite amount of bread or its equivalent may be added, fulfill every need. If we could regard the metabolism of the diabetic as measured by a pressure gauge where there may be either compression or a vacuum, then 0 represents the point where there is neither, so 0 in the metabolism of the diabetic represents the point where all carbohydrate taken is eliminated in the urine, or rather an amount equal to this, for, as stated, it is difficult to say whether, in such cases, a portion of the starch is utilized and the rest of the remaining sugar of the urine is made up from that of the protein; at least, if the elimination equals the ingestion, we may regard utilization as 0. This does not mean to imply that patients with such a degree of utilization may not progress to the + side, which is common, or drop to the negative side, which is rarer. This stage or grade is indicated by the fact that on a carbohydrate-free diet no sugar appears in the urine, or rather ceases to appear after a week of such restriction, for the accummulation of glycogen is bound to be discharged before the protein is called on. This second class means practically that as soon as bread is added to the antidiabetic diet in however small amounts, patients promptly respond with the elimination of sugar. These individuals can sometimes utilize fruit, milk or vegetables better than bread. In my list of personal cases no good illustration of this condition could be found, but Naunyn describes several which illustrate this state very accurately and which as far as carbohydrate utilization goes comes under the list graded as 0.

A woman thirty-four years of age sought treatment on account of great thirst and feeling of weakness; she was very anemic looking and her weight was 94.6 lb. Upon a strict antidiabetic diet, with the exception of one glass of milk daily, 3800 ccm. of urine were passed with 26 gm. of sugar. In six days, however, upon this diet the urine became sugar free and remained so when the milk was increased to 500 ccm. daily, but with one slice of bread (30 gm.) added, the patient's urine amounted to 1600 ccm. daily with 1.6 gm. glucose.

A man of fifty-three years had greatly increased hunger and thirst and moderate loss of flesh. There was a total left-sided facial paralysis without pain. Upon a diet selected according to the patient's choice 3400 ccm. of urine were passed daily with 221 gm. of glucose. In eighteen days, upon a meat and fat diet, no sugar was found in the urine. After three months of a strict antidiabetic diet 150 gm. of bread were added to the diet, whereupon there was a prompt return of sugar in the urine.

A man of thirty-three years sought relief for weakness and loss of flesh; hunger and thirst were increased; he passed urine oftener in large quantities and had cramps. With a strict antidiabetic diet to which 150 gm. of milk and 20 gm. of bread were added, he had a daily elimination of urine of 2450 ccm. with 100.4 gm. of glucose; with the removal of the bread and milk, 1200 ccm. of urine were passed which was sugar free. After months of a fat-protein diet only 40 gm. of bread could be added to the daily food without the recurrence of the sugar.

These are the cases in which such uncertainty exists with reference to their future course because, being on the border line, the tolerance

shows a tendency, though less often, to diminish as well as to increase.

Many diabetics belong to still another class which we may designate as minus, basing the severity of the disease on the steadily diminishing tolerance for starch or sugar. These are also the cases where there is a steady drain on the tissues of the individual for material for oxidation, a need which neither the protein, sugar nor starch can satisfy; they become steadily more emaciated and show most peculiarly those evidences of eminent acid intoxication,—an excessive ammonia-nitrogen factor, diacetic and oxybutyric acids in the urine. In these individuals, it is absolutely hopeless to attempt to eliminate the sugar wholly from the urine by diet or by medicine and all we can hope to do is to raise somewhat the sugar tolerance by short periods of abstinence or a very limited starch ration and then return to a fairly liberal carbohydrate portion in order to check the ever-increasing tide of acid poisoning. Here we must measure the amount of utilization of the theoretical protein sugar in the same way by the percentage of the total destroyed and not appearing in the urine. Of course it is possible that only a portion of this protein sugar undergoes this perverted metabolism, such an amount as is necessary to subserve the needs of the organism, but so wastefully used that a portion appears in the urine. It will render the matter much clearer, however, if we regard the total possible sugar as synthesized from the amino-acids in the proportion estimated by Lusk in a case where apparently all power of sugar combustion was lost. I wish to offer an illustration of this condition in the following cases:

Mrs. E. W., fifty-six years of age, one year ago suffered a severe shock from the death of her husband and serious illness of her son. She was confined to her room for three months; from that period she began to lose flesh and began to pass large quantities of urine, voiding usually once at night. Jan. 15, careful examination showed that the woman had arteriosclerosis. Upon an ordinary self-selected diet she passed 1900 ccm. of urine in a day with a sugar content of 61.9 gm. and 20.43 gm. of urea. In order to determine whether this diabetes was of pancreatic origin an examination of the stool was made, where the only abnormality found was a mass of fatty acid crystals which may come from an impaired secretion of pancreatic juice since alkali is lacking for soap formation, but may come equally as well from hastened intestinal motility; unsplit fat was not found. Jan. 19, after twenty-four hours abstinence from food, a sample of urine was found to contain 6.3% of glucose with a marked acetone reaction. Jan. 25, the patient was placed upon a strict protein-fat diet to which 120 gm. of bread (72 gm. carbohydrate) was added daily. Jan. 29, 3000 ccm. of urine were passed in the twenty-four hours with a sugar content of 120 gm. and a marked diacetic acid reaction. Unfortunately the total protein in the diet was not measured during this period, but from the sugar in the fasting urine and the excess of urinary sugar over starch intake, it is shown that the utilization is minus; in other words, sugar is being made from the amino acids, a fact also confirmed by the Gerhardt reaction. Feb. 9, on account of the evidences of acidosis, the patient was allowed 250 gm. of potato bread containing 45 gm. of carbohydrate daily as well as 120 gm. of white bread. At this time there was a marked fatty diarrhea controlled by the diet. March 8, 3000 ccm. of urine were passed containing 181.5 gm. of glucose and 42 gm. of urea and showing a strong diacetic acid reaction. Patient at this time was taking 162 gm. of protein daily and 117 gm. of carbohydrate which being deducted from the total elimination leaves 64.2 gm. to be derived from protein. Theoretically 162 gm. of protein should furnish 97.2 gm. of carbohydrate, of which that number less 64 must be utilized, or 33.2 gm., giving a utilization factor of minus 34.1%. This shows that the tolerance for both native sugar and protein sugar, is markedly diminished and the individual is providing needed oxidation material from her own tissues (loss of weight in one year from 152 lb. to 106½ lb. at present date).

April 11. The day's urine at this time amounted to 3875 ccm., with 242.2 gm. of sugar, and had a marked diacetic acid reaction; the urea was 32.6 gm. The diet had contained 142.8 gm. of protein, 120 gm. of white bread (92 gm. of carbohydrate) and 250 gm. potato bread (45 gm. carbohydrate) to which 15 gm. of levulose were added daily. Otherwise the patient was upon a strict antidiabetic diet whose caloric value was kept to the normal by means of fat. Now, if we deduct from 242.2 gm. of glucose eliminated, the 132 gm. of carbohydrate taken, we have 110.2 gm. to be derived from the proteid. Upon a theoretical basis of 60% of carbohydrate, this protein ought to provide 85.68 gm. of the same. It is easily seen that the elimination exceeds both the actual carbohydrate taken and that theoretically to be derived from the protein, so that utilization is absolutely lost and that the individual is living wholly on her own protein constituents since, evidently, after this long period, the depots of glycogen must be exhausted. Of course we may have two probabilities left; first, that fat may serve as a source of sugar, and, secondly, that the sugar to be derived from the protein may be much larger than ordinarily reckoned; in fact, some state that it may be as high as 90%. At least in this individual potato starch is no better utilized than wheat starch, and apparently all the levulose is eliminated as dextrose, for the sugar estimations were made with the polariscope and are likely to be larger, if anything, than those stated on account of the probable presence of oxybutyric acid where diacetic acid is so marked. The patient died June 10, two months after the last examination, of diabetic coma, having passed out of our care. Incidently, from April 8 to the fatal termination, the high-frequency current was used most faithfully by another physician, which explodes another much-vaunted cure.

From the rapidity and severity of the disease, as well as from the fatty diarrhea, this case was supposed to be of pancreatic origin, though no tumor of the pancreas was ever discovered and the possibility of the dependence of the diabetic condition on the general arteriosclerosis must always be borne in mind.

Another instance of the same marked deterioration of the carbohydrate utilization can also be seen in the following case:

April, 1905, J. G., druggist, aged forty years; has lost 30 lb. in the last five months. His weight when first seen was 147 lb., the appetite was fair and thirst was not marked. The fasting urine after eighteen hours abstinence from food contained 1.5% of glucose. On a partially restricted diet containing 60 gm. of bread and no sugar but vegetables *ad libitum* there were passed 1545 ccm. of urine with 33.32 gm. of glucose. Acetone was abundantly present but there was no diacetic acid.

September, 1905. Upon a strict antidiabetic diet to which 120 gm. of white bread (72 carbohydrate) and 100 gm. of potato chips (20 gm. carbohydrate) the total day's urine was 2720 ccm. with 60.1 gm. of glucose. Deducting the 60 gm. of glucose eliminated from the 92 gm. taken we have an utilization of + 34.7%. The patient was then placed on a protein-fat diet without carbohydrates and in November the urine was free from sugar.

January, 1906. By this time the weight had diminished to 129 lb. Upon an antidiabetic diet with 90 gm. of bread (54 carbohydrate) 100 gm. of Saratoga chips (20 gm. carbohydrate) and one liter of milk (40 carbohydrate) 3000 ccm. of urine were passed in a day with 142.5 gm. of glucose and abundant acetone. Deducting from the glucose eliminated the 114 gm. of carbohydrate in the food, 28.5 gm. were left coming from the proteid. Unfortunately the exact amount of protein taken was not determined, but in spite of the previous abstention, the tolerance for carbohydrate had grown steadily less and the utilization factor was minus. An examination of the feces at this time showed a large amount of fatty acid and soap crystals, numerous muscle fibers with striæ present and fragments of mucus intimately mixed with the feces.

June, 1906. With only 120 gm. of bread (72 carbohydrate) the day's urine contained 198 gm. of glucose with abundant acetone, but no diacetic acid, showing a gradually diminishing tolerance for carbohydrate in spite of a long period of treatment with the high-frequency current. The patient died in July of the same year.

From these instances of varied sugar metabolism we may learn, I think, that a + utilization indicates a hopeful outcome of the disease, and though the patient may have to maintain a moderate deprivation of carbohydrate food for a long period, and possibly for life, yet after a time a diet in which sugar alone is eliminated may be possible. In a restricted diet, however, too strong a warning cannot be given against the so-called gluten breads, which are always exploited as containing a large protein content, but nothing is ever stated in regard to the amount of starch contained, or at least the term "practically starch free" is used. If the amount of protein is worthy of being accurately stated in terms of per cent, certainly their starch is worthy of the same treatment and they could then be much more intelligently employed, for it would be easy to add the amount of carbohydrate ingested in this way to that taken in other ways, so that a basis for our calculation of utilization could be had. It has been my experience in the use of every diabetic bread but one, and that not particularly palatable, that even their restricted use causes an increased elimination of sugar when the utilization factor is 0, which can be determined, as stated above, either by the collection of the urine after twenty-four hours fasting or comparing elimination with the intake; three possibilities are always present: either that the tolerance will remain stationary, that it will increase, or that it may diminish. By complete removal of starch and sugar for a period, during which the urine should be carefully watched for sugar and particularly for diacetic acid, we can soon determine in which direction the indications with reference to tolerance point and govern ourselves accordingly. If the utlization is minus and the body cannot even oxidize the amount of sugar that theoretically ought to be derived from proteid containing not more than 10 gm. of nitrogen daily, then tolerance has reached its lowest ebb and there is very little likelihood that restoration will take place. Such individuals usually die from steadily increasing acidosis. In the determination of the utilization factor where actual weighing of food is not practical, as in private families, the diet charts of Dr. Arnold are of great assistance and, while not absolutely as accurate, of course, as weighing each article of food, serve admirably for an approximate estimation of tolerance.

## PROGNOSIS AND TREATMENT OF TUBERCULOSIS OF THE ANKLE IN ADULTS.

BY MARK H. ROGERS, M.D.,

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THIS paper is a study of the results in the treatment of tuberculosis of the ankle-joint in adults, and is based on the cases at the Massachusetts General Hospital during the last seven years. This study was undertaken because the treatment of this condition has not been satisfactory and because there has been a lack of knowledge as to what can be accomplished by the various procedures. The following points will be emphasized, namely, that the treatment of adults is different from that of children; that the duration of treatment must be shortened; and that in order to do this, more radical steps must be taken in the beginning of the disease.

There were twenty-three cases of tuberculosis of the ankle-joint during the last seven years on which this study is based, and of these, seventeen have either been traced by letter or the final results known by the records. A few cases have been omitted because of a doubt as to the correct diagnosis

Of the six cases which cannot be traced, three were seen but once at the clinic and, therefore, no conclusion can be drawn from them. Two cases were advised to have an amputation because of the extent of the progress, and probably this has been done at some other hospital. The other four were not observed long enough to establish any definite line of treatment. The remaining eighteen cases, of which there are fairly completed records, have been classified under the heads of fixation, operation and amputation. Practically all the cases were put on fixation treatment at first, and most of those that have had an amputation performed have also had an attempt at removal of the tuberculous focus. Under the heading of operation, I have included those cases that have had more or less thorough curettage of a tuberculous cavity or a resection of bone and joint. A tabulated list of these cases will be found at the end of this paper.

In a careful analysis of a large series of cases of tuberculosis of the ankle-joint from the Children's Hospital clinic made by Dr. Sever, which includes only children, it is evident that fixation and removal of weight-bearing has produced the best results and that the length of time of treatment was shorter than by the operative treatment. This is possible with a child by means of plaster-of-Paris bandage, or a brace, and high sole and crutches, and can be continued for a long period of time without very much effect on the mental condition of a child. But with adults it is an entirely different proposition. If we could say that at the end of six months or a year of such treatment there would be a functional cure without much danger of further trouble, then it would be justifiable to undertake it in every case, which means practically cessation of work.

In this series there were three cases, I, II, and III, treated throughout by fixation and partial removal of weight-bearing. Case I did not use his foot for four years, using a home-made artificial stump attached to the flexed knee-joint, and during this time he was able to do light work driving a team. He reports now that he is able to walk without crutches, although his foot is still weak. Case II was a boy of sixteen when he began treatment in 1904, and he was under close observation for four years. He now has a fairly serviceable foot which is in a position of equino-varus, but causing no symptoms. Case III developed tuberculosis of the ankle four years ago and she had fixation and crutches for one and one-half years. Then she had a quiescent foot without symptoms until a few months ago, when she began to have pain, due to the equinus position. This has since quieted down under fixation and she is still under treatment.

The results of treatment by fixation, the method which is preferable in children, and which is always used at first in adults, show that only three cases of these series obtained a useful foot and that the duration of treatment to accomplish this was at least four years. This is too long a period and the results are not sufficiently good to justify this procedure, except in selected cases.

Under the heading of operation, I have included those cases that were treated by incision and drainage, by curettage of a tuberculous sinus, and by complete resection of the tuberculous material. In this class there were six cases, three having a complete resection of the ankle-joint to remove as much of the focus as possible, and three having the simpler procedure of incision and drainage of an abscess with mild curetting.

These last three cases, VII, VIII and IX, illustrate very well the tuberculous process of a milder degree and the walling-off of such a process with the formation of a residual abscess. Case IX developed tuberculosis of the ankle-joint at five years of age and had no further trouble until he was thirty years of age, when an abscess developed. This was opened and within four months the sinus had closed. This represents a residual abscess, thoroughly walled-off and easily cured. Cases VII and VIII had a mild process for two years and were treated by partial fixation. Then after the foci was thoroughly walled off there developed abscesses which were curetted and drained, with sinuses remaining for a few months. They both report very satisfactory results with practically no symptoms. These three cases represent bone tuberculosis of not a very virulent type and are cured cases after treatment lasting two years.

The other three cases in this group of operative results, IV, V and VI, will be taken up in more detail in regard to the ultimate result, the length of time required to obtain a cure, and the amount of invalidism involved, because this method of treatment, complete eradication of the process, is theoretically the rational method.

In adult tuberculosis of the knee, the shoulder and the elbow-joint, in such cases as do not show a tendency to be self-limited and to become walled-off, a complete excision of the process, which means the whole joint, is recognized as the best procedure. A careful study of the x-ray findings in this series of cases shows that the most common situation of the focus is in the astragalus, with extension to the articular surface of the os calcis, tibia and fibula. If a resection is performed in the beginning, before the process has become widespread, an astragalectomy would remove the disease, but as a rule when this complete operation is undertaken it is necessary to remove much more. A good deal of bone tissue may be removed from the foot and still have finally a serviceable foot, if the tuberculous process will quiet down.

Those cases that have had an amputation performed have almost all had an attempt at a more or less complete operation first. There are only three cases that had this complete operation with a known end-result without amputation. Case VI was operated by the complete method in 1908, and now after two years of incapacity from work is using his foot constantly without symptoms in the occupation of a peddler. This is a very good result and compares favorably, with regard to length of time, with any other treatment. Case IV has a serviceable foot after two years of crutches. He can now walk without braces and complains only of some weakness. He has not worked because of tuberculosis of the lungs. Case V had a complete resection, and for some months afterwards there were many discharging sinuses. He developed acute tuberculosis of the lungs three months after the operation and has since died.

This makes only two cases out of eight that have a favorable end-result following a resection of the joint or an astragalectomy. The probable reason for this low percentage of cures by the method, which is theoretically correct, is that it is not undertaken until fixation has failed to arrest the process. In order to obtain good results, resection must be done when it is possible to remove the focus and not when several joint surfaces are involved.

| Case. | Age. | Date. | Duration of treatment. | Fixation. | Resection. | Amputation. | Remarks. |
|---|---|---|---|---|---|---|---|
| **FIXATION.** | | | | | | | |
| I. | 41 | 1905 | 4 years. | 4 years. | | | Was treated by Bier's hyperemia and fixation for two years. He reports that his foot is fairly strong, and is evidently a good result. No sinuses. |
| II. | 16 | 1904 | 4 years. | 2 years. | | | There are no sinuses now and foot is rigid and serviceable. Good result. Now has tuberculosis of lung. |
| III. | 20 | 1910 | 2 years. | 2 years. | | | Slight recurrence of symptoms after four years on account of foot strain. Good result. No sinuses. |
| **RESECTION.** | | | | | | | |
| IV. | 37 | 1909 | 1½ years. | 5 months. | Astragalectomy. | | Under fixation, condition became worse. After complete resection, discharging sinuses for six months. Now he can walk without crutches. Good result. Tuberculosis of lung. |
| V. | 36 | 1909 | 1 year. | 3 months. | Astragalectomy. | | Condition grew progressively worse with discharging sinuses. Developed tuberculosis of lung. Dead four months after operation. |
| VI. | 25 | 1908 | 2 years. | 6 months. | Complete. | | Two years without working. Now is able to walk without symptoms. Very good result. |
| VII. | 33 | 1908 | 3 years. | | Incision and drainage, 1908. | | Slowly developing process caused by drainage of abscess. Residual. Good result. |
| VIII. | 19 | 1908 | 4 years. | | Curettage, 1909. | | She used crutches for three years. Discharging sinus in 1907 and 1909. Residual abscess curetted 1909. Good result. |
| IX. | 30 | 1910 | | | Curettage, 1909. | | Tuberculosis ankle in childhood. Residual abscess which drained for four months. Good result. |
| **AMPUTATION.** | | | | | | | |
| X. | 45 | 1905 | 2 years. | 3 months. | Complete, 1905. | 1907 | After resection, sinuses and sepsis for one year. |
| XI. | 30 | 1905 | | | | | Amputation about two years later. Very good result from amputation. |
| XII. | 14 | 1900 | 9 years. | 8 years. | Curettage, 1904. Curettage, 1907. Resection, 1908. | 1909 | Was operated three times. Reports that she is very glad to have artificial leg. |
| XIII. | 18 | 1909 | 1 year. | | | 1910 | Reports that artificial leg is very satisfactory. |
| XIV. | 35 | 1908 | 3 years. | | Astragalectomy, 1908. | 1909 | Discharging sinuses after resection. She is very grateful for having an amputation. |
| XV. | 46 | 1905 | 2 years. | | Astragalectomy, 1905. | 1906 | Continuous sinuses and sepsis after resection. |
| XVI. | 28 | 1910 | 9 months. | 1 month. | Exploratory operation. | 1910 | Advised amputation after exploratory. Process too widespread to remove. |
| XVII. | 17 | 1903 | 5 years. | 1 year. | Astragalectomy, 1904. | 1908 | Discharging sinuses for three years after operation. |
| **DISAPPEARED.** | | | | | | | |
| XVIII. | 42 | 1907 | | | Exploratory incision. | | Advised amputation. Process too far advanced. Disappeared. |
| XIX. | 18 | 1908 | | | | | Recommended for amputation. Disappeared. |
| XX. | 27 | 1904 | | | Incision. | | Disappeared. |
| XXI. | 20 | | | | Incision. | | Disappeared. |
| XXII. | 27 | 1910 | | | | | Disappeared. |
| XXIII. | 24 | 1910 | | | Incision. | | Is being treated elsewhere. |

Eight of the seventeen cases, 44%, have had an amputation performed at the point of election. Most of them have been treated by other methods before an amputation was advised, first by fixation, generally until there was evidence of abscess formation, then by an attempt to remove the focus, with result that there were sinuses which showed no tendency to heal.

It is of interest to note that the cases which seemed to do poorly, following an erasion of the focus, were acute and early in the course of the disease showed no tendency to become walled-off. Such cases show a virulent form of tuberculosis and there is an early spread of the disease from the articular surface of the astragalus to the various joint cavities of the ankle. Compare the duration of symptoms of these cases before beginning treatment with the cases VII and VIII, which were cured by simple incision and drainage of abscesses.

The general feeling of the patients that have had an amputation, judging from letters received, is one of satisfaction in being able to work and to be free from dressings. The desire of the patient and of the surgeon is very strong to save a foot from amputation, but I have been impressed by the tone of the letters showing gratification after an amputation is done.

The length of time necessary to effect a cure in these eighteen cases, by any method of treatment, has been from two to four years anyway, and some have extended over eight years. This question should be fully considered in giving a prognosis in any given case and in planning out a course of treatment. It is too often the case that a man has been carried along for three or four years, being compelled to give up his work with the hope of an ultimate cure, and at the end of that time it may be found that he is in such a mental state that he is not capable of work. A man employed as a mechanic can quit work for four to six months and then take up his trade, but as a rule he cannot quit for four years and then be capable of earning as before.

As an example, Case XVI of this series was first seen after he had had trouble with his foot for seven months. At this time his ankle was swollen and indurated, the motions were limited somewhat by muscular spasm. The x-ray showed some destruction of bone, involving the upper surface of os calcis and the astragalus and a small focus in the articular surface of the fibula. Up to this time he had been able to continue work. From a study of the x-ray it seemed possible to remove the foci and save the foot. An exploratory incision was made with the idea of doing a radical excision of the diseased bones, if it were thought best. But when the joint was opened it was found that the process had extended both in front and back of the astragalus, and to remove the tuberculous material would require a very radical procedure, without any surety of an immediate cure, and a strong probability that it would take many months of drainage and three or four years of semi-invalidism. He was advised to have an amputation, which was accepted a month later so that he could go back to work in a comparatively short time, and could soon adjust himself to his changed condition. And yet from the patient's standpoint it was a great temptation to try and effect a cure by a resection. He is much better off with an early amputation than he would be at the end of three years with a foot that is healed and quiescent but not strong.

The attempt at a resection should be made in the very beginning of the process, before there is much involvement of the joint, or even before necrosis has extended beyond the bone itself. In order to do this, the diagnosis must be made early when the x-ray shows a very small focus. This is the time when the choice between fixation and a more radical procedure must be made. But according to this series, only two cases out of eighteen were cured by the fixation method and simple curetting of a residual abscess in less than four years, which is too long a time for the good of the patient. It takes courage to advise a radical resection in the very beginning, and it takes courage to advise an amputation in a case where there is a slight possibility to effect a cure by resection, but it is evident that both should be done in order to shorten the duration of invalidism and to cure the patient rather than the disease.

From a study of these cases it is clear that fixation is not sufficient to control tuberculosis of the ankle-joint in adults in a large percentage of cases, and even in mild cases it requires a long period of time. Chronic invalidism, meaning by that a certain mental condition that these people are sure to reach, when they are of no use to society, should be avoided. This can be done by an early diagnosis, and by outlining the treatment so that the end-result is obtained within one or two years.

A complete operation, a radical removal of the focus, should be performed before there is much involvement of the various joint-surfaces, and it should not be undertaken only because fixation has failed. Better results can, undoubtedly, be obtained if this is done as soon as the diagnosis is established, and seems justifiable since fixation is not sufficient.

Amputation has been necessary in over 50% of these cases. It should be advised when the process has invaded several joint-surfaces especially posterior to the astragalus. The results of amputation are good from the patient's point of view, and an artificial leg is much preferable to long-continued dressings and sinuses. The length of time of treatment should be diminished to within two years.

## SOME PROBLEMS OF SCHOOL INSPECTION.*

BY WM. PEARCE COUES, M.D., BOSTON.

THE necessity and importance of the work of medical inspection of school children needs no brief before such a conference as this. It will be of interest to consider a few general topics and

* Read at the Boston 1915 Health Conference, Feb. 20, 1911.

then to take up some points in regard to the work in my own district.

It is a cause for congratulation that the work of school inspection has grown in other cities in this country and abroad. Only a short time ago the literature on this subject was extremely meager. Now it is voluminous, and every general medical journal has articles upon the subject at frequent intervals.

The conception of the school inspector's duties has changed correspondingly with the increase in the knowledge of the importance of the health of school children as a future necessity to the welfare of the community or nation.

The former idea that the school physician was one whose duty was solely the examination and exclusion from schools of pupils afflicted with contagious diseases has changed with the awakened interest in the hygiene and safeguarding of the health of the child.

The necessity for more exacting and general examination of children with this end in view has brought about the present agitation concerning school inspection and the numerous contemplated changes which have been proposed in this city.

Naturally the work of school inspection differs much in different districts in a city. The immediate proximity of certain schools to the large and recent foreign population causes a preponderance of certain diseases in these districts. Thus we find parasitic skin diseases and general contagious diseases common in these localities. The further from these centers the outlying districts are, the fewer, as a rule, of these troubles will be found.

The necessity for school inspection in a community is in inverse ratio to the knowledge and intelligence of that community. We have found in the work in our district that rarely is it through willful negligence that parents or pupils do not follow out the suggestions given, but rather through a failure to grasp their importance through ignorance.

One of the most important steps in the development of school inspection in Boston was the establishment of nurses[1] in the schools. This advance, at first tentatively tried, through the Boston Instructive District Nursing Association, proved such a success as to be permanently adopted by the School Board. It would be hard to state too emphatically how much good this has accomplished. Before the school nurse's advent, the school physician was handicapped to a great degree in his efforts. His suggestions as to treatment by the family physician or the hospital might or might not be carried out,— there was no way of being sure. The nurse filled this gap and saw that the children received the treatment that the physician suggested.

The medical inspection law of 1906 has done much to put medical inspection of schools on a sound basis in this state, and naturally has also added to the labors of the school physician. To make the work still of wider scope is the idea and aim of those who have the best interests of school inspection at heart.

At present the school inspector in his routine work sees only the cases referred to him by the teacher or those that the nurse happens to find. It is obvious that such a plan makes incomplete work and puts the question of decision on the teacher oftentimes. The necessity of some change which would enable the nurse to see all the pupils and refer them to the physician as necessary is apparent.

One of the numerous criticisms of the work is that, as there is no law obliging parents to take their children for treatment of the troubles found by the school physician, his work is useless except for the old primary object of school inspection,— the detection and isolation of contagious disease.

Judged from the experience we have had in this district, nothing could be more untrue. Of all the parents and guardians interviewed by the school nurse for the school physician last year, it is doubtful if 1% were unwilling to have treatment prescribed for their children. In answer to the criticism that no good is accomplished by the present system, I would give the following general figures. It is realized that they represent the work of only one district, but I know that there are many school physicians doing the same work. During the last school year, the school nurse escorted 860 children to hospitals for the treatment of various ailments, all of which were treated. It is estimated that the parents took an equal number directly to hospitals on the school physician's advice; still others were referred to their family physicians and treated by them.

The inadequate and unhygienic school accommodations for many of the school children add to the ailments of the children for which the school physician's advice is required. It would be a wise and health-giving measure should the School Board cut off every unessential of the school course and put this money into adequate accommodations for the children.

To make the work of school inspection more effective under the present régime, a suitable room should be provided in all the schools for the examination of pupils. There should be the simple, necessary things to facilitate proper examination. At present there is no proper place to examine a child in the recumbent position in any school in my district. How are the school inspectors to to their work to the best advantage without such necessary aids? It is well known that the examination of a heart case is practically worthless unless the child is examined recumbent as well as standing. Moreover, it is essential to have a place of examination in each school building so that the work of school physician and nurse can be carried out with as little disturbance to the school routine as possible.

In the past year we have made numbers of examinations of large groups of children for vari-

[1] Coues, W. P.: The Medical Inspection of Schools in Boston, the Present Limitations and Future Possibilities. Boston Med. and Surg. Jour., vol. clx, 1909, p. 746.

ous purposes, such as fitness for the open-air classes, mental retardation and throat and teeth examination. Without burdening you with many figures, some few may be of interest concerning the retarded pupils. These children had all been in the same grade more than a year, and it was thought best to see if there were any marked and readily found physical causes which might be a factor in the mental backwardness. One hundred and fifty-eight pupils were examined.

Forty-one, or $25\frac{9}{10}\%$, had defective vision; 2, or $1\frac{2}{10}\%$, had defective hearing; 122, or $77\frac{2}{10}\%$, had chronically enlarged tonsils; 127, or $80\frac{3}{10}\%$, had defective or carious teeth; 34, or $21\frac{5}{10}\%$, had marked pallor (the Hb not estimated); 3, or $1\frac{8}{10}\%$, were markedly undersized; 1, or $\frac{6}{10}\%$, was extremely nervous without definite signs of chorea.

Practically all of these children have been sent to the proper sources for treatment of these various conditions. It is of interest to compare the result of the examination of the teeth and throat of these children with that of 212 children of normal mental caliber looked over last year.[2] Seventy-two per cent of these children showed chronic enlarged tonsils; 50% showed carious teeth. Comparing, we have 212 average children; 72% had chronic tonsils; 158 retarded mental development; $77\frac{8}{10}$ % had chronic tonsils. Two hundred and twelve average children, 50% had carious teeth; 158 backward children, $80\frac{3}{10}\%$ had defective or carious teeth. It would seem from these statistics that chronically enlarged tonsils and the generally accompanying adenoids had little to do with the mental backwardness of these children, but that carious teeth might play a considerable rôle in the causation of this condition.

In conclusion, no one is more alive to the inadequacies of the present system of school inspection than the school physicians themselves. At the same time, a large amount of work of direct benefit to the children has been done by school inspection.

Dr. Durgin and those directly associated with him in the Board of Health are the only ones who have an intimate knowledge of the truth of this statement. The general public is absolutely ignorant of the true state of the case and the public press seemingly willfully ignorant of it.

When the public is better educated as to the necessity and importance of school inspection, better results may confidently be expected.

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THE State Health Department has had made a list of the lepers now in the state of Texas, who number 30. Of these, 11 are reported married and 9 single; 10 are severe cases, 2 medium and 6 mild; 20 are said to be Americans and 2 Mexicans; 16 are male and 6 female. As to location, 11 are in Galveston, 8 in San Antonio, 3 in Dallas, 3 in Sourlake and 1 each in Liberty, High Island, Del Rio, Comfort and Austin. They vary in age from thirteen to sixty-eight years. — *Jour. Am. Med. Asso.*

[2] Coues, W. B: The Results of the Clinical Throat Examination of Two Hundred and Twelve School Children. BOSTON MED. AND SURG. JOUR., vol. clxii, p. 215.

## TUBERCULOUS MENINGITIS, WITH LEUCOCYTOSIS AND A PURULENT EXUDATION CONTAINING MANY BACILLI. A CASE REPORT.

BY I. CHANDLER WALKER, M.D.,
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(From the Medical Clinic of the Carney Hospital, Dr. Henry A. Christian, Physician-in-Chief.)

IF the spinal fluid obtained by lumbar puncture is turbid and if this turbidity is found to be due to polymorphonuclear leucocytes, one is naturally inclined to the diagnosis of acute meningitis caused by some one of the pyogenic cocci. In some cases it is very difficult to find typical cocci in meningeal fluids, so that the absence of cocci in the smears might not lead one to suspect some other bacteria not easily stained by the ordinary methylene blue stains. In this way it is quite possible to overlook a case of tuberculous meningitis presenting a turbid polymorphonuclear leucocytic exudate, especially since most of the textbook and system discussions of tuberculous meningitis emphasize strongly the non-purulent character of the spinal fluid and the prominence of lymphocytes in the fluid. That cases, however, do occur showing the above described type of spinal fluid caused by the tubercle bacillus is emphasized by the following case.

P. B., age nineteen, admitted to the Carney Hospital Oct. 6, 1910.

*History* (obtained from patient's mother). —The patient had been perfectly well, mentally normal and had worked as a plumber's apprentice up to the middle of July, 1910. At this time he became ill with [1] "typhoid pneumonia." He was confined to his bed for five weeks. During this illness the patient had no abnormal mental symptoms. He appeared to have perfectly recovered from the illness and worked the following three weeks. On Sept. 3, 1910, he became ill with "pneumonia." [1] In the beginning he had pain in his left chest, and a few days later he complained of severe headaches unaccompanied by vomiting. On Oct. 3, the patient failed to recognize his mother and became violently delirious. During the next three days there was no change in his condition, and he was brought to the Carney Hospital. On admission, Oct. 6, 1910, his temperature was 101.5, his pulse 110, his respirations 36 to the minute.

Physical examination showed an emaciated but fairly well-developed young man lying in bed with his head slightly retracted and turned towards the right side, his legs acutely flexed on his thighs and trunk, and breathing rapidly though not laboredly through a widely opened mouth. There are some fibrillary twitchings of the muscles of the arms and legs and the arms are constantly being moved about in a semi-purposeful manner. The patient seems to vaguely notice his surroundings, but he makes no response when addressed.

*Eyes.* — Both eyes are kept constantly rolled up under the lids with a slight tendency to direct the pupils upward and to the left. There is no evident strabismus. The pupils are moderately dilated, both are irregular, the left possibly is slightly larger than the right. No definite reaction to light is obtained, although both pupils are constantly altering their size.

*Ears* reveal no discharge, and there is no mastoid tenderness.

[1] Diagnosis as stated by the patient's mother.

*Lips, teeth and tongue* are covered with dry sordes. Tongue lies in the middle of the mouth, is protruded in the mid-line.

*Throat* is negative.

*Neck* is held rigidly and slightly retracted. Attempts to bring the head forward appear to elicit pain.

*Glands*, cervical, axillary, right epitrochlear and inguinal, are palpable, not greatly enlarged.

*Thorax* is long, narrow and symmetrical. Expansion is good and equal on the two sides.

*Lungs*. — Everywhere in front there is resonance, and no râles are heard. In the left back below the level of the spine of the scapula there is dullness, and a few scattered fine moist râles are heard. In the right back below the angle of the scapula the percussion note is flat, there is a decreased transmission of breath sounds and many fine and consonating râles are heard.

*Heart*. — The apex beat is palpable in the fifth interspace 3¾ inches from the mid-sternal line. On percussion the left border of the heart corresponds with this position of the apex beat, while the right border is one inch to the right of the mid-sternal line, and the upper border is at the lower margin of the third rib. The heart action is regular, the sounds are of a weak and poor quality, unaccompanied by murmurs.

*Abdomen* is moderately distended, tympanitic throughout except in the right flank. There is no shifting dullness, no palpable masses.

*Liver* dullness extends from the sixth rib to the costal margin, edge not palpable.

*Spleen* not enlarged to percussion, edge not palpable.

*Genitalia* are small, no palpable masses or areas of tenderness.

*Extremities*. — Marked atrophy of the calves and the thighs. Muscles of the arms and legs are spastic, but the spasticity is easily overcome. Positive Kernig sign is elicited on both sides.

*Reflexes*. — Arm reflexes cannot be elicited. Right knee-jerk is present, the left absent. Both Achilles reflexes are present, but the left one is sluggish. There is a positive Babinski sign on the left side; on the right the plantar reflex is normal. There is no ankle clonus, no cremasteric and no abdominal reflex present.

*Skin* shows no rash. There is some redness over the bony prominences, but no decubitus.

*Blood*. — Hemoglobin 85%, white blood cells 22,400. Smear shows a polymorphonuclear leucocytosis, no other abnormality. Widal reaction negative.

Oct. 7. Patient is quite irrational, but will protrude the tongue and close the eyes when requested. The legs are held flexed and are immediately returned to this position after forcible extension. The patient is incontinent. His temperature is 99.6, pulse 120, respiration 60 during the forenoon. Under chloroform anesthesia a lumbar puncture was performed and 40 ccm. of turbid fluid was removed under a moderate increase of pressure. Thirty cubic centimeters of Flexner's anti-meningococci serum was injected. The patient's condition remained unchanged during the day, and the evening temperature was 101.2, pulse 140, respiration 60.

Oct. 8. The patient is gradually failing. He is in a state of stupor. Respirations are Cheyne-Stokes in type, temperature 102, pulse 134, respirations 60, with periods of apnea lasting for twenty seconds.

Oct. 9. The patient is distinctly worse, temperature is 104, pulse 150, respiration 70, still of Cheyne-Stokes type. The patient became increasingly stuporous and died four hours later.

*Examination of the spinal fluid*. — Amount, 40 ccm.; turbid, not blood stained. Specimen was centrifugalized in a sterilized tube. Smears from this sediment showed a great predominance of polymorphonuclear leucocytes, there being 98% of polymorphonuclear and 2% of mononuclear cells. There were also present very many bacilli, acid-fast, and not decolorized by the Gram's method. These bacilli resisted decolorization by 10% nitric acid after carbol-fuchsin staining for fifteen minutes.

Two guinea pigs were injected, each with ½ ccm. of the spinal fluid, one subcutaneously, the other intraperitoneally. The guinea pig injected subcutaneously died three days after the injection with a subcutaneous abscess at the site of injection. Smears made from this abscess showed an acid-fast bacillus. Material from this abscess was rubbed up with sterile water and injected subcutaneously into a guinea pig. This guinea pig killed three weeks later showed the same acid-fast bacillus present in caseous areas in the spleen. The guinea pig which was injected intraperitoneally with spinal fluid was killed three weeks later, and at autopsy the peritoneum was found to be studded with small tubercles, and in the liver, spleen and omentum there were small foci of caseous material. Sections from these areas showed under the microscope miliary tubercles with giant cells and caseation. In these sections an acid-fast bacillus was found.

### SUMMARY.

A young adult with physical signs of meningitis, fever and leucocytosis shows on lumbar puncture spinal fluid turbid, containing 98% of polymorphonuclear leucocytes and very many bacilli, with the morphological and tinctorial peculiarities of the tubercle bacilli, yielding by animal inoculation the typical lesions of tuberculosis. The case is reported to emphasize the fallacy of diagnosing meningitis as due to pyogenic cocci from obtaining a turbid spinal fluid containing a large excess of polymorphonuclear leucocytes.

## THE PUBLIC HEALTH LABORATORY.*

BY S. L. ARMS, M.D.,

*Director of the Bacteriological Laboratory of the Boston Board of Health.*

THE first public health laboratory was established in 1888 by Dr. Gardner T. Swarts, of Providence, R. I., but since that time laboratories have become such a necessity that they are found in nearly all large cities, and the states with but few exceptions also have laboratories in order that they may do the needed work for the smaller towns and cities which would otherwise be unable to have that service and also to do the larger or state problems,— as water and sewage work, food and drug analysis and medico-legal examinations. Besides the large cities and states, a constantly increasing number of smaller cities and towns have municipal laboratories and keep constant supervision over contagious diseases and the milk supply.

At the outset, the aid of the laboratory was most frequently asked in the diagnosis of diphtheria, but at the present time there are many other ways in which they may aid the physician.

In order to render the best service there should

* Read at a meeting of the New England Pediatric Society, Feb. 25, 1911.

be co-operation between the medical profession and the laboratory, each doing what it can to aid the other, and both working together for a common purpose — the betterment of the public health.

A few ways in which the laboratory can aid the physician are:

First. Correct diagnoses.

Second. Earliest possible report.

Third. Reports to the physician of just what is found.

To take these up a little more in detail, of course it goes without saying that unless the diagnoses are reliable, the physician very quickly loses confidence in laboratory reports.

Let us consider for a moment a few possible sources of failure to get a positive culture from a case of diphtheria:

First. The bacilli may be localized and the swabs fail to become infected.

Second. There may be organisms present which overgrow the Klebs-Loeffler even when incubated for fifteen hours, the optimum time for diphtheria.

Third. In laryngeal diphtheria, especially in an infant, it is extremely difficult to obtain a swab from the seat of trouble.

As to the report, in order to do the greatest amount of good, the diagnosis must be known to the physician as soon as possible, and in municipal laboratories this can be done by telephone, many laboratories reporting in this way all positive diagnosis cultures and positive smears from the eyes. Of course it is impossible to report all examinations by telephone, this being followed by a mail report in all cases, and these in turn being sent as early as possible.

There are many times when a simple positive or negative report should not be given, and in these cases a few words may help the physician considerably.

The physician can aid the laboratory in many ways: Each outfit contains a card with blanks for data, and if these are filled out in full it makes them of much greater value for statistical purposes.

By reporting to the laboratory any failure in the service, such as inability to obtain outfits at any station or failure of any station to send outfits in promptly, and also by letting the laboratory know it if can be of service to him in any way.

There is probably no way in which the public health laboratories can aid the pediatrician more than in its work toward improving the milk supply, and they are ready to do much more. Boston is particularly fortunate in having the services of Prof. Jas. O. Jordan at the head of this department. I wish to quote from an address delivered by him at the quarterly meeting of the Massachusetts Association of Boards of Health, October, 1907: "Those who desire clean milk must be willing to pay for it. But clean milk, regardless of price, is the cheapest variety to purchase.

"Outside the price question, the public unfortunately is not earnestly interested in the milk problem. The quality even is not considered with enough seriousness to cause many consumers to go to a slight personal inconvenience to ascertain the facts concerning their supplies.

"The experience of the Bureau of Milk Inspection of the City of Boston supports this contention, for although the consumers of that city have been for years invited to avail themselves of the opportunity of having their supplies examined free of charge, not in recent years have enough purchasers taken advantage of this offer to average one sample a day."

During 1910, 399 samples were brought in by consumers.

There is still a great deal of work to be done from the educational standpoint not only of the public, but the profession as well, when a statement like the following can be taken from the annual report of the health department of a city with a population of over three hundred thousand, and the bacteriologist making this report was a physician.

"During the last two years the department has been making bacteriological counts of market milk.

"In 1908 there were 213 counts which showed an average count of 12,048,000 bacteria per cubic centimeter; 42% contained less than 500,000 bacteria per cubic centimeter; 14% between 500,000 and 1,000,000 bacteria per cubic centimeter; 21% between 1,000,000 and 5,000,000 bacteria per cubic centimeter, and 23% contained over 5,000,000 bacteria per cubic centimeter. This is not a very bad condition, as 56% contained less than 1,000,000 bacteria per cubic centimeter, and 77% contained less than 5,000,000 bacteria per cubic centimeter.

"In 1909 there were 194 counts which showed an average of 4,466,000 bacteria per cubic centimeter. Forty-two per cent contained less than 500,000 per cubic centimeter; 6% between 500,000 and 1,000,000 bacteria per cubic centimeter; 26% between 1,000,000 and 5,000,000 bacteria per cubic centimeter, and 28% more than 5,000,000 bacteria per cubic centimeter. While the average count of the year is much less than last year, the per cent of low counts is not quite as high. Forty-six per cent contained less than 1,000,000 bacteria per cubic centimeter, and 72% less than 5,000,000 bacteria per cubic centimeter.

"This work was instituted to find out about what the average bacterial count of our market milk would be, and to give us some definite statistics should we wish at any future time to establish a bacteriological standard.

"The result shows that at least 75% of the milk sold in this city throughout the entire twelve months of the year has a fair bacteriological content. Only about 25% of the milk examined contained an excessive bacteriological count. With the continued improvement shown, it is only a question of a short time when a bacteriological standard of 500,000 or 1,000,000 bacteria per cubic centimeter will not work



FIG. 1.

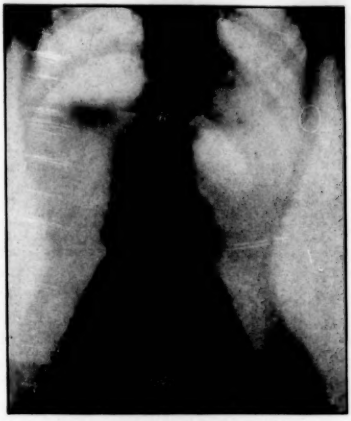


FIG. 3.



FIG. 2. X-ray of stomach in standing position. Note the downward position of the stomach and that it is considerably below the crest of the ilium.



FIGS. 3 and 4. Showing sagged stomach and colon. A coin marks the position of the umbilicus.

a hardship upon the dairymen and will be possible as a routine measure."

It will be remembered that the statement was made that only about 25% of the milk sold during the entire twelve months contained an excessive number of bacteria, but on examination of the table showing total number of laboratory examinations by months during 1909 we find that in May 6 counts were made, 15 in June, none in July and 12 in August; only 33 out of a total of 194 being made during these four warm months.

I am sure that every one present here to-night would consider, from the figures given, that considerably more than 25% of that milk contained an excessive number of bacteria and would also raise the question, How can he report with so much satisfaction on the gain in the entire twelve months when he made no tests in July? But 42% of the milk tested could have sought a market here.

I am glad to say that such a report as this is most unusual and I know of no other place where those having charge of the situation would be satisfied with a milk supply which averages 4,466,000 bacteria per cubic centimeter, or willing to have the great majority of the samples taken during those months when the counts would naturally be the lowest.

The majority of the health departments report a much better condition regarding their milk supply, and this is bound to improve.

Every dairy producing certified milk is an educational center, and their number and influence are continually growing.

Many farms are to-day producing clean milk and setting a good example to their neighbors.

In conclusion, let me add that the laboratory is ready to aid the physician in every possible way, but it can be readily seen that its field of usefulness is determined by the physicians themselves, or, in other words, the laboratory cannot aid the physician who does not use it.

## PREGNANCY AS A POSSIBLE RELIEF FOR VISCERAL PTOSIS.*

BY LLOYD T. BROWN, M.D., BOSTON.

THE medical journals lately have been paying more attention than usual to the subject of the ptoses and their connection with certain types of disease. It is not the intention of this paper to discuss the various causes of the ptoses, but I would like to give, if possible, a few ideas that have come to me since I have been paying attention to the human body more as a mechanical proposition than as a repository of an appendix, a gall bladder or a pregnant uterus. Formerly what happened to the curves of the spinal column when a patient was laid in an etherized condition on a hard, flat, operating table, or what effect this might have on the convalescence, never occurred to me or seemed to be looked upon as important by those I was working with. What happened to the viscera and the spinal curves during pregnancy and the puerperium, and the fact that these times might be used as a definite beginning for changing faulty postures and ptoses, also never occurred to me, but that such is the case I am going to try to show.

* Read before the Obstetrical Society of Boston, Jan. 24, 1911.

The type of woman who drifts from specialist to specialist with what is diagnosed as a neurasthenic or a functional back, and who may have all the distressing symptoms of neurasthenia, such as nervous indigestion, constipation and more or less pelvic trouble, is that type which is known as the round-shouldered, hollowed-back class. And this class is all that there is time to take up to-night.

Examination of such a woman shows the following differences from the normal or ideal type. I take this description in part from an article by Dr. Reynolds in the *Journal of the American Medical Association*, Dec. 3, 1910.

In a person who stands in the round-shouldered hollow-backed position, "the center of gravity is carried too far forward for easy maintenance of balance, and the capacity of the upper part of the abdomen is decreased by the forward droop of the upper dorsal spine and the descent and flaring of the ribs, while the relaxation of the anterior abdominal wall produced by the approximation of the ensiform cartilage to the pubes permits the formation of a pot-belly with consequent increase in the capacity of the lower abdomen." (See Fig. 1.)

Now, it is known and can be shown by x-ray pictures taken in the standing position after the giving of a bismuth meal that in this type of woman this pot-belly is occupied by the sagged stomach and colon, and that it is not, as is commonly supposed, fat. (See Fig. 2.)

Consider now the change that this position causes in the shape of the abdominal cavity, and what bearing this change may have on the pelvic organs. In a normally poised figure the axes of the abdominal and pelvic cavities are at nearly right angles, and the thrust of the former is such that it comes on the pubes and the strong fasciæ of the lower abdominal wall, with very little pressure into the pelvic cavity.

In a figure of the round-shouldered, hollow-back type, with the forward position of the abdomen or the pot-belly, the pelvis must be tilted forward, and this brings the thrust of the abdominal cavity against the loose anterior abdominal wall, which, on account of its attachment to the pubes, must push the contents of the pot-belly backward into the pelvis against the pelvic organs. From a large series of visceral x-rays that have been taken in this type of case, it is possible to conclude that practically all of these cases have a visceral ptosis either of the stomach and colon or of the colon alone. Therefore, it is the sagged abdominal viscera which occupy the pot-belly and which are consequently forced backward into the pelvis. (See Figs. 3 and 4.)

Considering that in this type of case constipation is the most common trouble, it is easy to

see that the weight of the sagged and clogged great bowel must come upon the pelvic organs and that this may be a possible cause for some of their malposition or displacements and the symptoms from them.

There is not time to consider what effects the sagged viscera may have, not alone on the digestion, but also on the general condition of the patient, and on the amount of reserve energy that she is able to store up for future use. But when one realizes that in the process of sagging not only the walls of the viscera themselves must be tremendously stretched and thinned out, but also that the splanchnic nerves and the blood vessels must undergo a similar stretching, the wonder is that there has been so little trouble, and it is more easy to understand why the taking of food in certain cases may be followed by distress which limits the amount able to be taken, as well as desired; and also why the consequent slowing up of the progress of the food through the intestinal tract may give more opportunity for fermentation and putrefaction and the absorption of these products with the resultant coated tongue, bad breath and lack of appetite for the morning meal.

Pregnancy in this type of woman often causes in the early months considerable mental as well as physical distress. For at this time all the pelvic organs are congested and consequently more sensitive to irritation or pressure from above. For the first three months, while the uterus is still a pelvic organ, it is a very common occurrence for the patient to have the so-called morning sickness, which usually lasts each day until the patient has been up and about for a period of time. May not this sickness be explained in this way? During the night, while the patient has been in the recumbent position, the hollow viscera have fallen back into their more normal place in the abdomen. When the patient takes up the standing position in the morning, the colon and its contents sag downward and press on the congested ovaries and uterus, with the resultant vomiting which lasts until the circulation readjusts itself or the viscera are allowed by the lax abdominal walls to sag forward and away from the pelvis. As a suggestion, it would be interesting to see if it would make any difference in the morning sickness if a patient were to roll on her face while still recumbent and then to get out of bed while still in this new position, or even better after she has put on a corset or belt which fits close enough around the lower abdomen to keep the viscera from sagging downwards.

When the uterus becomes an abdominal organ and keeps on enlarging and growing upward, then is the time that there should be some effect on the patient's general condition if there is anything in the theory that visceral ptosis is one of the chief reasons why certain women never seem to have any reserve force.

The uterus as it enlarges from below upwards gives the viscera the most perfect form of support imaginable, because it is always present and until the last month is constantly enlarging and, what is most important, it is present for five months. This last is particularly important, because it is a well-recognized fact that any muscle or ligament that is kept constantly on the stretch loses its power of complete contractility, and also that if such a muscle or ligament can be relieved of that strain for a period of time, it will tend by the natural laws of repair to return to its original normal condition. Now, as before mentioned, in pregnancy such a support is given to the viscera and applied in the best possible way. Consequently, there ought to be a change for the better in the condition of the patient, because the stomach and colon, being held up in position, must be able to digest and assimilate the food with much more freedom. That this is very often so seems to be the case, from the fact that most women usually gain weight which cannot be accounted for by the baby alone.

What happens to the bony skeleton during delivery, and how its relaxation may be taken advantage of, is so well known to you all that I pass this by and will turn to what is the most important part of all, the puerperium, because it is then that the treatment should be planned with the idea of doing everything possible which will help keep the woman in as good condition in the future as she was during the last months of her pregnancy.

The two chief points on which to lay stress at this time are the relaxation of the pelvic joints and the fact that the hollow viscera have had their support of the past few months entirely removed.

First, as to the pelvic joints. As the patient lies on her back, on a more or less hard bed, there is a constant pressure on the sacrum and the dorsal spine, and this must tend to flatten out the normal lumbar curve. This flattening puts on the stretch the spinal muscles and ligaments which are attached to the sacrum and the ilia and so prevents them from being able to contract properly and so protect the pelvic joints which in their relaxed condition especially need this protection. This lack of protection, when one considers the anatomy and the structures surrounding the pelvic joints, may be not only a possible factor in lengthening the puerperium, but also may be an immediate cause of the backache and after-pains which are not definitely due to the expulsion of blood clots and lochia. For methods to relieve this, anything should be done which will tend to take away possible strains and which will permit or assist the natural contraction of the muscles and ligaments. For this, great benefit can be obtained from the use of a small hard pillow, or folded towel, placed in the hollow of the back in order to support the lumbar spine. Or, in certain cases, the cross strapping of the low back with adhesive plaster will give the greatest possible support to the pelvic joints.

Concerning the removal of the support given by the uterus to the hollow viscera, we come to a more difficult and equally important problem. It is known that in the recumbent position the

viscera tend to take their normal position, and, therefore, anything which will help this tendency should be done. Therefore, it seems to me that the swathe, concerning which there used to be so much discussion, is a very valuable asset. But it should be properly applied. It should come down as low as, or lower than, the pubes in front, and should be fitted tightly around the pelvis, particular care being taken not to get the pressure so it is applied on the crests of the ilia, because this tends to separate the pelvic joints. A pad or folded towel should be placed so that it comes between the pubes and the umbilicus. Above the umbilicus and the iliac crests the swathe should be loose, as this is the region which is occupied by the stomach and transverse colon, and there should be plenty of room there.

In order to thoroughly carry out this idea of proper support, it is most important that when the time comes for the patient to be up and about, she should be given a properly fitting corset, with or without pelvic belt attached to it, this latter depending mostly on the amount of backache she had before pregnancy. The principal points to be careful about in selecting such a corset are to be sure and have no constriction about the lower ribs and upper abdomen; also that the corset should not press on the iliac crests, but should fit snugly about the pelvis.

Exercises are very important and should be begun as soon as the danger of an embolus is passed. These should consist at first in general massage, and later in active motions of the legs and arms. All straight leg raising, which, of course, puts all the strain on the pelvic joints, should be avoided. When the patient is up and about a modification of the regular setting-up drill should be given, and if this is not made too long and too arduous, it usually will be carried out by the patient.

The amount of good that can be accomplished by the carrying out of the ideas suggested in this paper, of course, must be limited, but it is certainly true that if the possibilities which pregnancy opens up to the physician were more generally realized and appreciated, many women would be saved an immense amount of suffering and could possibly be started on the road to future improved health and strength.

## Reports of Societies.

### NEW ENGLAND PEDIATRIC SOCIETY.

Fourteenth Meeting of the New England Pediatric Society, held Feb. 25 in the Boston Medical Library.

Dr. John Lovett Morse in the chair.

The following papers were read:

(1) THE TRANSFUSION OF INFANTS WITH GLASS TUBES.

Beth Vincent, M.D., Boston.

(2) THE PUBLIC HEALTH LABORATORY.

B. L. Arms, M.D., Boston.

(3) DIARRHEA IN INFANTS ASSOCIATED WITH THE PRESENCE OF THE GAS BACILLUS IN THE STOOLS.[1]

Arthur I. Kendall, M.D., and Richard M. Smith, M.D., Boston.

Dr. Beth Vincent read a paper entitled,

THE TRANSFUSION OF INFANTS WITH GLASS TUBES,

In which he said:

The paper describes in detail the preparation and use of coated glass tubes in transfusing infants. The technic is based on experimental work carried out in the Laboratory of Surgical Research, Harvard Medical School. Tubes 12 cm. in length and 3 cm. in diameter at the ends are practical for the average newborn baby. The coating material consists of a mixture of vaseleur, paraffine and stearin in 2, 2 and 1 proportions. The paper includes the report of three cases successfully transfused by this method. In one case, the transfusion was done for post-operative hemorrhage; in the other two for hemorrhagic disease of the newborn.

DISCUSSION.

Dr. W. C. Quinby: It has been a great pleasure to have been able to help in a small way in this very interesting work of Dr. Vincent. It has convinced me thoroughly that from a practical surgical standpoint there is no other mechanical apparatus which will permit, with any fair chance of success, transfusion from the adult to a baby. The Crile or Elsberg apparatus are both inadequate, and even if one is exceedingly skilful in their use, I should say that the chances of success are relatively small, whereas with the tube method which Dr. Vincent has used the chances are distinctly in favor of a successful transfusion. Even when the procedure is made more easy by the use of tubes, experience and practice on animals is necessary in order to acquire familiarity with a method as minute as is this. Not only are the babies' vessels small, but they are in a position such as the groin which makes them very difficult to get at. I think that Dr. Vincent's work is especially commendable in having made transfusion, which we all know to be of value, also practical.

Dr. E. H. Risley: I would like to ask Dr. Vincent if he had any difficulty in using a tube which was straight and not flexible, because about a year ago I was doing some transfusion work and was attracted by an article by some New York men in which they described a preparation of carotid arteries of dogs. They took the small arteries out, strung them on two Crile canulas and straightened them out by means of a small silver wire and then preserved them in a weak 2% formalin solution and used them from time to time in transfusion. The preparation was very simple and they could be used as long as three or four weeks after preparation. They worked pretty well with the exception that the Crile canulas were most of them a little too large to accommodate the small carotid arteries of the dogs. This gave an extra length and the tube was a little bit flexible. If the tube is bent too much, the blood flow would not be as good. I wonder if Dr. Vincent found any difficulty because the tubes were straight.

Dr. C. P. Putnam: I would like to have Dr. Vincent tell us if he has any idea as to the amount of air which entered into the artery of the baby. It used to be held that even the smallest amount of air in a hypodermic syringe could cause an embolism. Also, does he know what amount of heat is necessary to sterilize these tubes by this method; whether the boiling of the wax would be considered sufficient. We must agree that

[1] Journal, March 2, 1911, page 306.

the observations and operations reported in his paper are of the greatest interest.

DR. W. P. LUCAS: One point which I think should be brought out is the importance in doing an operation like this of being acquainted with the experimental side of it, because I do not think that where one has not done the operation he can realize the minuteness and care which an operation of this kind requires.

DR. VINCENT: I should think that there would be distinct advantage in using the flexible tube, but the chance to do these transfusions came in my experience at longer intervals than six weeks and you have to have something to be practical surgically, that is, always available. I daresay that one who does a great many transfusions might be aided by their use. The greatest difficulty is in getting the tube into the small veins. We generally expect to unite the tube to the father's artery without much difficulty.

As far as the entrance of air was concerned, in the laboratory we disregarded it a great deal and did not have any trouble. The tube is very small and I do not imagine that it contains air. This is a point which I knew, from a surgical point of view, would be criticised, so I always fill them with salt solution.

In regard to the sterilization of the tube, it has been heated a great many times. Many of the tubes are not taken out of the box at all, and I am sure that the heat is sufficient to sterilize them, but I am not perfectly sure just what the temperature is, but in boiling I know that the temperature is carried above the boiling point of water.

DR. B. L. ARMS had a paper entitled,

### THE PUBLIC HEALTH LABORATORY.

### DISCUSSION.

DR. F. P. DENNY: I have been very much interested for the past twelve years in the problems to which Dr. Arms has referred, through my work in the Brookline Board of Health Laboratory, and there is just one matter in regard to the diagnosis of diphtheria that I should like to speak on. In a small laboratory where I personally know most of the physicians who send in the cultures, I hear more or less of the clinical side of the cases, and I see a fairly large proportion of the cases myself at the Board of Health Hospital. This has enabled me to get a fairly definite idea of the relation of the bacteriological diagnosis to the subsequent course of the disease. This experience has impressed on me the vital importance of making an early diagnosis and of giving antitoxin early. Some of the physicians always make cultures in suspicious cases and often give antitoxin without waiting for a report from the culture. As a result they seldom have a serious or fatal case unless the parent has neglected to call them in early. On the other hand, I regret to say, we see cases where the physician is called and makes no culture at his first visit. On the second day, as the case is then typical clinically, he makes the culture but waits for a report before giving antitoxin and then often gives too small an amount to be effective at that period Diphtheria is one of the few common medical diseases where promptness in diagnosis and treatment are vitally important. In many acute diseases, delay in diagnosis is of little consequence provided we keep the patient in bed. In this disease the responsibility of the physician is very great.

DR. ARMS: We always report if streptococci are present, but do not record other organisms in mixed cultures. We do whenever requested state what we find.

DR. J. L. MORSE: I should like to ask Dr. Arms just what the Board of Health is doing; how many different sorts of examinations they make, and how large a field they cover. In the examination of the sputum, do you examine for anything besides tubercle bacilli?

DR. ARMS: For the eleven months ending Dec. 31, we examined about 15,000 throat cultures, and slightly over 5,000 sputa, just over 2,000 typhoids, 191 smears from the eyes, 968 smears from the urethra, 340 glanders, 10 rabies, besides a good many other examinations classed under miscellaneous tests. In the sputum examinations we do not look for other organisms unless requested, although if streptococci are present this fact is reported.

The following discussion relates to a paper published in the JOURNAL, March 2, 1911, page 306, entitled

### DIARRHEA IN INFANTS ASSOCIATED WITH THE PRESENCE OF THE GAS BACILLUS IN THE STOOLS.

Dr. R. M. SMITH: I only want to reiterate what has already been said about the simplicity of the test. It takes no time to make up the media; the interpretation is extremely simple, and there seems no reason why it should not have a very wide application. It is only necessary to boil a little sterilized milk in a test tube to which has been added some fecal matter and at the end of twenty-four hours look at it, to see if the characteristic reaction is present.

DR. FRITZ TALBOT: This piece of work is of vast importance because it puts the treatment of the disease that we see so much of in the summer on a very definite and practical basis. This work and the work that was done on the dysentery bacillus is very interesting because it does not agree with what we are taught by the German school, and I congratulate the writers on their piece of work.

DR. T. M. ROTCH: I think that this is a very important communication and one that marks a decided advance in regard to diagnosis and treatment. I only hope that what has been stated will prove to be correct. I think it would be well not to simply speak of buttermilk in the treatment, but to state the special strain through which the buttermilk is produced. We know that there are a very large number of strains which will produce buttermilk, but perhaps only certain ones which may have a specific action on the bacilli producing the disease, such as has been indicated by Dr. Kendall. I merely mention this because a good many physicians have found that they have gotten no results whatever from the use of buttermilk. Now that we can pick out at least one organism which is affected by its use, we may go on and find others which will be affected in the same way.

It may, of course, eventually be proved that it is not an especial lactic acid bacillus which has a specific action on certain saprophytes, but that it is the acid medium produced by the bacilli which inhibits the special organism which is producing the intestinal disturbance.

DR. J. L. MORSE: After listening to this interesting paper there are a few questions which I should like to ask. In the first place, was the buttermilk which was used last summer in the treatment of these cases pasteurized or unpasteurized? To what do you attribute the action of the buttermilk; to a direct antagonistic action of the bacteria in the buttermilk on the gas bacillus, to the high acidity of the buttermilk, or to the fact that they are both organisms which live on sugars and that the lactic acid bacilli destroy the media so the gas bacillus cannot grow?

In giving the so-called buttermilk, I suppose it really was buttermilk which was made from skim milk, which consequently had a very low fat content, a moderate sugar and high proteid, the proteids being

very finely divided. Now the question comes to my mind, whether the low fat and rather low sugar content of the food may not have had something to do with its action.

Dr. C. W. Townsend: With regard to the gas bacillus, is there anything whatever that you can detect about the stools or symptoms that differ from those of the ordinary infectious diarrhea?

Dr. Kendall: I would like to say a word or two about the buttermilk which is now being placed on the market. Much of the ordinary buttermilk as it is delivered to the consumer consists of milk which has passed its usefulness, which has been sent back to the factory, pasteurized, lactic acid bacilli added and churned. After the removal of the butter fat, it is reintroduced to the trade under the guise of buttermilk. In addition to the lactic acid bacilli, which are supposed to be the principal agents, it also contains large numbers of putrefactive bacteria. These putrefactive bacteria may be so numerous that they actually overgrow the lactic acid organisms, and, instead of obtaining sour milk, one gets putrid milk. Buttermilk intended for therapeutic purposes ought not to be prepared in this way, but should be milk which is soured at the earliest possible moment and then introduced to the trade. Experience has shown that pasteurization does not necessarily kill the putrefactive organisms, and in the old milk referred to the subsequent introduction of lactic acid bacteria may actually fail to bring about the desired reaction in many instances.

The buttermilk used on the Floating Hospital was prepared by the Walker Gordon Laboratory and was unpasteurized and contained the bacillus bulgaricus.

There is apparently a distinct advantage in using buttermilk prepared by the method described in these cases of diarrhea caused by the gas bacillus. By using this soured milk it is possible to introduce immediately into the intestinal canal a certain amount of preformed lactic acid together with bacteria which can act upon the residual lactose of the buttermilk, thus maintaining a steady stream of lactic acid in the intestinal tract. We know that lactic acid is burned in the body, and if one relied exclusively upon the lactic acid present in the milk at the time of its administration, it is problematical how much lactic acid would be left by the time the milk reached the site of bacterial activity. By introducing together with the lactose these lactic acid bacilli we have in a measure a guarantee that the lactic acid will be maintained in at least a moderate concentration until the normal intestinal lactic organism can proliferate sufficiently.

The test consists of inoculating sterile whole milk with a small amount of the fecal material and either heating the resulting mixture to 80° C. for twenty minutes or bringing the mixture to the boiling point of water in a water bath, and maintaining it at this temperature for three minutes. If sterile, whole milk is not available in emergencies; the test can be made by using certified milk instead of a sterile milk. Ordinary market milk would be unsuitable for this test unless it were sterilized because not infrequently such milk contains gas bacilli. It must be apparent that the most reliable results will be obtained through the use of sterile milk.

There are a great many different strains of lactic acid bacilli in use at the present time for preparing sour milk. Certain of these organisms, and notably the bacillus bulgaricus, have been grown in milk so long that they have actually become what might be termed milk bacteria. Furthermore, these organisms have been used for generations in certain oriental countries for the production of sour milk for human consumption and it is fair to assume that the use of these organisms prescribed rationally would probably lead to no harm. On the other hand, the mere fact that an organism produces lactic acid is no guarantee that it would be a useful one for introduction into the intestinal tract, and it would seem that the careless use of cultures which have not been subjected to careful scrutiny to determine their fitness for therapeutic purposes is to be deplored. If the learned doctor from Sweden, — I do not remember his name, — has used buttermilk indiscriminately, it is hardly to be wondered at this his results were so unsatisfactory. Experience in the past has shown that buttermilk is of benefit only in a rather limited and probably circumscribed type of intestinal disturbance. Buttermilk cannot by any means be regarded as a universal therapeutic agent.

## Book Reviews.

*A Practical Guide to the Newer Remedies.* By J. M. Fortescue-Brickdale, M.A., M.D. Oxon. New York: William Wood & Co. 1910.

This volume is a review, not of patent medicines or secret remedies, but of "the newer drugs (mainly the products of synthetic chemistry), the composition of which is published and whose pharmacology has been more or less accurately ascertained." These are presented under eight groups, and their administration and therapeutic value carefully discussed. The book should be useful to internists and general practitioners.

*Personal Hygiene and Physical Training for Women.* By Anna M. Galbraith, M.D. Illustrated. Philadelphia and London: W. B. Saunders Company. 1911.

This volume is an admirably written textbook on the hygiene and physical training of women, adapted not only for teachers, students and graduate nurses, but for individual use in the home as well. It contains an excellent series of plates, illustrating physical and dancing exercises, and a description of the outdoor sports best suited to women. Its appearance is a wholesome sign of modern progress and it should aid in the establishment of sensible ideals of physical culture.

*Remedial Gymnastics for Heart Affections.* Being a translation of "*Die Gymnastik der Herzleidenden*" von Dr. Med. Julius Hofmann and Dr. Med. Ludwig Pöhlman. By John George Garson, M.D. Edin. With 51 full-page illustrations and diagrams. New York: Paul B. Hoeber. 1911.

This English translation of a German work presents the system of gymnastic exercises employed in cardiac cases at Bad-Nauheim. The first portion describes the indications for their use and the methods of testing and controlling their results. The second describes the exercises, 8 active and 20 passive, and is illustrated by an excellent series of plates. The system deserves study by all who are concerned with the mechanotherapeutics of cardiac disease.

*An Introduction of Surgery.* By Rutherford Morison, M.A., M.B., F.R.C.S. Edin. and Eng., Professor of Surgery, University of

Durham College of Medicine, Newcastle-upon-Tyne; Senior Surgeon to the Royal Victoria Infirmary. With 146 illustrations in the text and 5 colored plates. New York: William Wood & Co. 1911.

Here is a little book in octavo of 162 pages, with five supplementary colored plates. The writing is purposely elementary; it is inevitably fragmentary, but it is suggestive and informing for both lecturers and students. It is well written, effective and good. As the author says, his chief object in lecturing is to emphasize the importance of general principles, and his purpose in writing this book is to provide a supplement to, not a substitute for, the standard textbooks. The book is divided into ten topics or chapters, — Inflammation; Bacteria; Ulcers; Gangrene; Syphilis, Tubercle and Malignant Disease; Hemophilia; Wounds; Abdominal and Pelvic Viscera; Indications for Operation, and X-Rays. All of these topics, though briefly treated, are discussed cogently. We believe that the book should prove of great assistance to the second or third-year student at the outset of his course in surgery. He should read it and assimilate its teachings in a week.

*A Handbook of Practical Treatment.* By Many Writers. Edited by JOHN H. MUSSER, M.D., LL.D., and A. O. J. KELLY, A.M., M.D. In three volumes. Volumes I and II. Philadelphia and London: W. B. Saunders Company. 1911.

Under the modest title of "handbook," this elaborate work in three large octavo volumes presents the contributions of seventy-nine experts in special departments of medicine to a complete system of practical therapeutics. Such a symposium, representing the opinions and experiences of so many individuals over so wide a range of subjects, cannot help varying in merit and inevitably lacks the unity of a book by a single author. It, however, has the advantages of its defects and makes up in breadth of treatment and variety of standpoint for what it lacks in singleness of conception. Its several divisions deserve some detailed consideration.

The first volume deals with the general, fundamental principles of therapeusis and of prophylaxis; with diet in infancy, childhood and adult life; with drug therapy, serum therapy, organotherapy and the various physical and mechanical methods of treatment; with the treatment of the intoxications, including drug poisonings and addictions, insolation, food intoxication and poisoning by reptiles and insects; and finally with the treatment of diseases of the blood, the lymphatic system and of the ductless glands. In the way of criticism, discrimination runs the risk of being invidious. Of especial merit and interest, however, seem the chapters on dietetics, on diseases of the blood, and on the surgical treatment of diseases of the thyroid and parathyroid glands. The illustrations, though not many, are excellent. Particularly to be commended are those in the sections on massage, mechanotherapy and hydrotherapy.

The second volume takes up the treatment of diseases of the circulatory system, including cardiac surgery; of the infectious diseases; and of tropical diseases and diseases due to animal parasites. There are special chapters on the ocular, aural and joint complications of the infectious diseases, and on the surgical complications of typhoid fever. The chapters on rubella, madura foot, and foot-and-mouth disease have the merit of brevity; but that on actinomycosis might to advantage be more extended. The chapter on tuberculosis perhaps deserves particular commendation for its completeness and excellence of illustrations.

The third volume of this work, which has not yet appeared, will complete the consideration of diseases of the remaining systems of the body.

That there should be a certain amount of repetition is inevitable in a work of such magnitude and with such variety of authorship. The fields of medicine are not sharply bounded, but overlap each other; and consideration of the same topic from different aspects is often helpful and advantageous. To the editors of the book belong much credit for the system and harmony of the whole. The chapters on special diseases of necessity contain brief introductory statements of etiology, pathology and diagnosis, but these have been reduced to the minimum essential for an understanding of the discussion of treatment. On the whole the editors seem to have shown the greatest judgment in the arrangement and coordination of the work; and have given to the medical profession an admirable compendium of the best modern expert knowledge in the treatment of human disease.

*Pulmonary Tuberculosis and Sanatorium Treatment.* A Record of Ten Years' Observation and Work in Open-Air Sanatoria. By C. MUTHU, M.D., M.R.C.S., L.R.C.P., Associate of King's College, London; Physician, Mendip Hills Sanatorium, Wells, Somerset; late Physician, Inglewood Sanatorium, Isle of Wight. New York: William Wood & Co. 1910.

This book consists of a series of essays on tuberculosis. It is divided into three parts. The first deals with some of the scientific aspects of the subject in which the author gives expression to strange views. Sweeping aside the truths of bacteriology, he calmly asserts without a shred of evidence that tubercle bacilli may be formed in the body from harmless saprophytes if "the soil" is favorable. The second part of the volume is devoted to the sanatorium treatment, and the third and concluding division to social and economic factors concerned in the production of tuberculosis.

In addition to the open-air treatment, the author advocates formaldehyde inhalations and static electricity.

The book is well printed and well illustrated.

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## RESTORATION OF THE ARMY CANTEEN.

THERE is at present pending before the National Congress a bill for the restoration of the army canteen. This bill has met with considerable opposition from the same elements originally instrumental in obtaining the abolition of the canteen, and it seems opportune to consider briefly the results of this abolition as bearing on the question before Congress.

The canteen system in the United States Army was abolished in 1901, under the argument that its suspension would conduce to sobriety and good conduct among the soldiers. As a matter of fact, precisely the opposite seems to have been the result. In an article on "Army Morals and the Canteen," in the *North American Review* for March, 1911, Mr. James H. Blount points out that the effect of abolition has been to drive troops from the canteen, where they obtain pure beer and malt liquors under respectable environment and oversight, to saloons, where they get bad spirits under disreputable surroundings and without supervision. The testimony of commanding generals in the army is unanimous upon this point. In consequence there has been an increase in the army not only of drunkenness and disorderly conduct arising therefrom, but in the incidence of venereal disease. In his report for 1904, General Chaffee, then at the head of the army, made the following emphatic statements on this subject:

"The canteen provided places of amusement and social intercourse, where men could get light refreshments under restraining, decent and orderly influences.

"If men are unable to get a glass of beer in a decent and orderly manner in the garrison, they will resort to the vile brothels which cluster around the borders of the reservations, where they drink all manner of alcoholic beverages and often sink into debauchery and ruin.

"With the beginning of the work on the addition to the post of Fort Sam Houston it is observed that the prices of business property immediately in the rear of the new reservation have materially advanced and that arrangements are already being made for the construction of the usual assortment of saloons and dives that the virtual abolition of the canteen feature of the post exchange has made a universal accompaniment of every military post.

"I think it is beyond question that permission to sell beer in the post exchange would drive out of business at least two thirds of the lower resorts in the vicinity of posts."

Similar statements relative to the results of abolishing the canteen have been made by army medical officers. In his report for 1907, the Surgeon-General of the army says:

"This office concurs in the opinion expressed by most medical officers of the army that the abolition of the sale of beer in the post exchanges has had much to do with the increase of venereal diseases and alcoholism in the army by driving the soldiers to disreputable resorts outside of the post and beyond control of the post authorities."

As a matter of fact, in the decade from 1888 to 1897, when the canteen was in operation, the mean annual rate of admission to hospital for venereal disease among army soldiers was 7.5%. In 1901 this figure rose to 15% and in 1909 it was 20%, a number far in excess of that obtaining in the army of any other civilized nation. The rate of admission for this cause in the British Army is 7.6%, in the French Army 3.5%, and in the Prussian Army 1.9%. The significance of these facts is great. It is not that the individual soldiers of these nations are intrinsically more virtuous or continent than our own, but that they are more considerately safeguarded from temptations which they are unaccustomed to resist. The canteen may have induced a few men to drink beer who otherwise would not have done so, but it has induced many more to keep away from the hard liquor and gambling of the saloon; and its abolition has apparently led to a great increase of venereal disease in the army.

After ten years of such abolition these results should be efficient arguments for the restoration of the army canteen. The canteen is the soldier's club, where he can obtain beer and soft drinks, meet his comrades socially, play games and read magazines under decent conditions. Its alternative is the saloon, where he drinks bad whiskey and meets questionable associates of both sexes.

The consequences are obvious. The abolition of the canteen was a mistake, but, like many other errors, will perhaps have been worth while if its results serve to teach the community a sensible attitude towards the liquor question. Doubtless abstinence from alcohol is a wise virtue, and it should be fostered among soldiers by education and by the encouragement of temperance organizations. But it should be remembered that the practice of abstinence from liquor and other evils is not likely to develop more rapidly in the army than in the community at large.

"Single men in barricks
Don't grow into plaster saints."

The desirable thing is to keep them in barracks and not send them where their growth in sanctity will be still more rudely inhibited. The young soldier offers his life for the service of his country and has a right to demand that that life and its welfare shall be judiciously protected and not exposed to needless peril.

For these and other reasons it is sincerely to be hoped that the bill for restoration of the army canteen will be passed. A petition in its favor, signed by two hundred prominent physicians in civil practice throughout the country, has been presented to Congress. We believe that favorable action on this bill will prove conducive to the best interests of temperance, morality and health in the United States Army.

## PROBLEMS OF THE MILK SUPPLY.

IN the issue of the JOURNAL for May 25 we published a note describing the milk exhibit then in progress at Philadelphia. This exhibit closed on May 27, after a most successful week, with an average of 15,000 visitors daily. At the meetings of the several societies under whose management it was held, numerous papers were presented, among them one by Dr. Milton J. Rosenau, of Boston, president of the American Association of Medical Milk Commissions, on "The Pasteurization of Milk," and one by Dr. Nelson C. Davis, of Dorchester, Mass., on "Certified Milk."

The problem of milk supply is one of the most vexing of those that now beset public sanitarians, and one whose solution offers great difficulty in doing justice to all concerned. In this connection reference may be made to the recently published report of a special committee appointed by the Washington Chamber of Commerce to investigate the milk situation in the District of Columbia. This report was transmitted to the United States Senate Committee on the District of Columbia, and is printed as a Senate document (No. 863). It deals *in extenso* with the various evils associated with the milk traffic, presents the history of federal and local regulation of milk supply, discusses pasteurization, refrigeration, the use of the tuberculin test and the determination of bacterial content of milk, comments on infant feeding, the care of milk in the home, prepared milks and milk products, and finally presents a series of fifty-nine recommendations based on its findings and conclusions. In short, it affords a thorough and careful exposition of various aspects of the milk problem, applicable not only to Washington, but to all large urban communities. With its extensive appendices, it constitutes a valuable document deserving of study by those concerned in the equitable and salutary regulation of the milk business in Boston and in other cities. An exhibit such as that recently held in Philadelphia is also a most efficient mode of arousing public interest in the question and should lead to the demonstration of efficient methods of production, transportation and distribution, which may well be adopted elsewhere.

## HOURS OF WORK FOR NURSES.

IN the issue of the JOURNAL for May 25 we published a preliminary announcement of the seventeenth annual meeting of the American Society of Superintendents of Training Schools for Nurses, which was held in Boston on May 29, 30 and 31. In addition to the addresses mentioned in this note, others of interest and importance were made by Dr. Richard C. Cabot, Dr. William M. Conant and Dr. Thomas F. Harrington. The fourteenth annual meeting of the Nurses' Associated Alumnæ was held during the same week, and on June 1 a reception to visiting nurses was given by the Boston Instructive District Nursing Association.

Among the subjects discussed at the sessions was that of the number of hours' work that should be required daily of nurses. There seemed to be a general opinion that the twelve-hour day of service is not only arduous, but imposes an injurious tax on the strength and efficiency of nurses, and that an eight-hour day, with three reliefs, should be substituted therefor. In hospitals and training schools this is possibly true, and probably in time a reduction of the hours of compulsory routine work will mitigate the hardships of life in such institutions and prevent injustice and physical detriment to the individual.

In private work and in times of exigency, however, no nurse who is worthy of her calling will forget that one of its privileges, which places it with that of the physician on a level above the mere manual occupations, is the privilege of working beyond hours and without stint in the service of others. There will doubtless always be women who will rise to this sense of their privilege and responsibility. Experience, however, shows that this is by no means universally the fact, and that a tendency even is discernible, which should at least be seriously considered by those interested, that a granting of privileges may be carried too far. In private nursing, stipulation of hours, as of other matters relating to the care of the patient, may well be allowed to remain without special regulation. As suggested above, no injustice will be done if the same principles are made to apply to the nurse as to the physician.

## PURE FOOD LAW COVERS THE INGREDIENTS, NOT THE VIRTUE OF CONTENTS.

In the issue of the Journal for April 20 we noted the trial before the United States Supreme Court at Washington, D. C., of an appeal in the case of Dr. O. H. Johnson, of Kansas City, Mo., relative to the right of a manufacturer under the pure drug law to label a medicine with statements relative to its supposed or alleged curative properties. On May 29 the court rendered a decision sustaining the original verdict of the District Court in Missouri. In the opinion of the court the pure drug law applies only to statements as to the ingredients of contents, not to asseverations as to their virtue. If the statement on a box or bottle of medicine be "shown to be false only in its commendatory and prophetic aspect," such statement cannot be inhibited under the provisions of the law. This case marks the final establishment of an important precedent. Hereafter the pure drug law can be construed only with regard to statement of facts, and the gullible public must protect itself by its own discretion against the therapeutic claims of patent medicines and advertised alleged "cures" for the ailments of the flesh.

## MEDICAL NOTES.

Plague and Smallpox at Amoy. — It is reported in the daily press that during the fortnight ending June 2 there were 54 deaths from the bubonic plague, and 7 from smallpox, at Amoy, China.

Appointment of Dr. Swingle. — It is announced that Dr. L. D. Swingle, of the Nebraska Wesleyan University, has been appointed research parasitologist at the Wyoming Agricultural Experiment Station.

A Centenarian. — Samuel Putnam, who died last week at New Salem, Mass., was locally reputed to have been born in 1807. He is survived by one son, by two grandchildren (one of them a physician), and by three great-grandchildren.

Injury to Prince Joachim. — It is reported from Berlin that during the military maneuvers of the Second Guard Brigade, on May 29, Prince Joachim, Emperor William's youngest son, was accidentally injured, sustaining a fracture of one of the bones of the foot.

Yellow Fever Aboard a French Steamer. — A press despatch from Fort de France, Martinique, states that on May 29 the French steamer *Perou* was quarantined at that port, having had on board, during her voyage from the Isthmus of Panama, 15 cases of yellow fever, with 2 deaths.

Croonian Lectures for 1911. — It is announced from London that the annual Croonian lectures before the Royal College of Physicians of London will be delivered on June 13, 15, 20 and 27, by Dr. Henry Head, F.R.S., on "Sensory Changes from Lesions of the Brain."

Association of American Physicians. — At a meeting of the Association of American Physicians, recently held in Atlantic City, N. J., the following officers were elected for the ensuing year: President, Dr. J. George Adami, of Montreal; Vice-President, Dr. Lewellys F. Barker, of Baltimore.

Reported Successful Corneal Graft. — Report from Paris on May 28 states that at a recent meeting of the French Ophthalmological Society, Dr. Borsch, an American oculist practicing in that city, read a paper describing the successful transplantation of a portion of dog's cornea into the eye of a patient blind from ophthalmia.

A Distinction for Professor Pickering. — Report from Berlin states that on May 31 the German emperor conferred the Prussian Order of Merit upon Edward Charles Pickering, S.D., Ph.D., LL.D., director of the Harvard Observatory and Paine professor of practical astronomy in Harvard College. This order has two civil

departments, one of science and one of fine arts. Prof. Louis Agassiz and Prof. Simon Newcomb are the only other Americans who have received this distinction in the department of science.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS. — At the twenty-fifth annual meeting of the American Association of Genito-Urinary Surgeons, held at New York City, May 31 to June 3, 1911, the following officers were elected for the ensuing year: President, Dr. Edward Martin, of Philadelphia; Vice-President, Dr. Edward L. Keyes, Jr., of New York; Secretary and Treasurer, Dr. J. Bentley Squier, of New York; Members of Council, Dr. Charles L. Gibson and Dr. Robert H. Greene, of New York. Philadelphia was selected as the next place of meeting.

TOLERANCE OF ANIMALS FOR SNAKE VENOM. — In an editorial in the issue of the JOURNAL for Dec. 1, 1910, we commented on the high degree of immunity to snake venom possessed by the hedgehog. Experiments recently recorded by Billard and Maublant in the *Comptes Rendus* of the Biological Society of Paris indicate that the owl, the duck and the domestic cat are similarly immune to the venom of vipers. The idiosyncrasy and tolerance of various animals for different poisons is one of the singular phenomena of comparative physiology.

DEGREE OF D.P.H. AT UNIVERSITY OF MICHIGAN. — It is reported that a special medical course leading to the degree of Doctor of Public Health is to be established at the University of Michigan. The course will be of two years' duration and will be open to graduates of reputable medical schools. The work will be divided equally between preventive medicine and sanitary engineering. The purpose of the course is to train physicians to serve on municipal health boards and in other positions as public hygienists.

A PROJECTED WORK ON TROPICAL SURGERY. — The College of Medicine and Surgery of the University of the Philippines has issued a circular letter announcing its intention of issuing a publication on "The Surgery of Tropical Diseases," and requesting contributions of data therefor from the personal observation and experience of physicians who have lived and studied in the tropics. There follows a list of fifty-three topics upon which information is specially requested; for instance, the infrequency of prostatic hypertrophy among native Filipinos, which appears to be very noteworthy. It is to be hoped that ample contributions may be made by those qualified, in order that this projected work may fulfill its promise of excellence and completeness.

HEALTH OFFICERS' ASSOCIATION OF NEW JERSEY. — At a meeting held in Newark, N. J., on May 24, the Health Officers' Association of New Jersey was formally organized and its constitution adopted. Thirty-three members and several guests were present. The purposes of the association are "the advancement of knowledge relating to public health and the promotion of social intercourse among health officials." There are to be five regular meetings each year. The active membership is to consist of employees of the state and local boards of health. Members of these boards are eligible to associate membership.

## BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, June 6, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 85, scarlatina 26, typhoid fever 9, measles 156, smallpox 0, tuberculosis 76.

The death-rate of the reported deaths for the week ending June 6, 1911, was 15.97.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, June 3, 1911, was 213, against 213 the corresponding week of last year, making the death-rate for the week, 16.12. Of this number 114 were males and 99 were females; 204 were white and 9 colored; 138 were born in the United States, 74 in foreign countries and 1 unknown; 39 were of American parentage, 142 of foreign parentage and 32 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 60 cases and 2 deaths; scarlatina, 26 cases and 2 deaths; typhoid fever, 5 cases and 0 deaths; measles, 166 cases and 4 deaths; tuberculosis, 70 cases and 14 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 26, whooping cough 4, heart disease 16, bronchitis 2. There were 19 deaths from violent causes. The number of children who died under one year was 40; the number under five years, 60. The number of persons who died over sixty years of age was 51. The deaths in hospitals and public institutions were 95.

A Death from Anthrax at Lynn. — A fatal case of anthrax at the Lynn Hospital was reported last week from Lynn, Mass. The patient was a morocco worker who had recently moved to that city from Peabody, Mass.

Diphtheria in Boston. — Twenty-five cases of diphtheria are reported to have occurred in Boston last week. A special investigation of the source of this outbreak is being made by the Boston Board of Health.

Smallpox in Two Massachusetts Towns. — Report from Oxford, Mass., states that on May 31, 3 cases of smallpox were discovered in that town in a family that had recently arrived from Seattle, Wash.

One case of smallpox was also reported last week in Wakefield, Mass.

National Conference of Charities and Correction. — The thirty-eighth annual meeting of the National Conference of Charities and Correction is being held this week in Boston. It is estimated that two thousand delegates will be in attendance at its sessions and at those of various affiliated organizations which meet at the same time. Among the latter is the American Red Cross. President Eliot will deliver an address on "Education in Sex Hygiene." Other topics to be considered are juvenile delinquency, the suppression of tuberculosis, and the care of the insane.

Work of the Berkeley Infirmary. — At a meeting held in Boston last week in the interests of the Berkeley Infirmary, addresses were made by President Charles W. Eliot, Dr. Benjamin Tenney and Dr. John W. Dewis. The directors of the institution reported that during the year 1910, 4,594 old cases and 813 new cases were treated at the Medical Department of the Infirmary, and 974 patients were visited at their homes. In the Dental Department 668 patients were treated, of whom 223 were new cases. It is desired by the directors to raise a considerable sum of money for the equipment of a new operating room.

Massachusetts Medical Society. Demonstrations and Tea at Tufts College Medical School. — The Faculty of Tufts College Medical School extend a cordial invitation to the members of The Massachusetts Medical Society to visit the school building, Tuesday, June 13, from four to six o'clock P.M., during which time tea will be served.

There will be demonstrations in the departments of Pathology, Chemical Pathology, Pharmacology, Histology and Physiology. These demonstrations will consist of laboratory teaching methods and various exhibits.

There will also be a demonstration of the Leitz Kaiserling projection apparatus; opaque projection, including upright objects; lantern slide projection; microscopical projection; moving objects; stained sections; direct x-ray projection.

Dr. Arial W. George will exhibit a series of x-ray plates projected directly on the screen.

### NEW YORK.

Bequest to St. Luke's Hospital. — By the will of the late Mrs. Catherine E. Daly, of New York, the sum of $10,000 is left to St. Luke's Hospital to establish two beds in memory of her husband, Henry F. Daly, for the benefit of "dramatic, minstrel, variety and circus performers," one for a man and the other for a woman.

Appointment of Dr. Connolly. — Dr. Walter H. Connolly has been appointed first deputy medical superintendent of Bellevue and Allied Hospitals, to succeed Dr. George O'Hanlon, who is now promoted to the position of general medical superintendent. Dr. O'Hanlon has served for eight years on the staff of the Buffalo State Hospital for the Insane and four years on that of the Albany City Hospital.

Election of Dr. Newcomb. — On May 31 Dr. James E. Newcomb, of New York, was elected president of the American Laryngological Association, at its annual meeting held in Philadelphia. Dr. Newcomb is consulting laryngologist to Roosevelt Hospital and is prominently identified with the Stony Wold Sanatorium in the Adirondacks for incipient tuberculosis in young women and girls, of which Mrs. Newcomb is president.

Beth David Hospital. — The Federation of Russian Polish Hebrews of America has purchased a city block on 86th Street, near the East River, for a new building for the Beth David Hospital. This will be 90 by 72 feet and six stories in height, and will have a capacity of 150 beds. The Beth David Hospital is the successor of the Yorkville Hospital, an institution established for some time on East 82d Street, and its present quarters, with only 30 beds, are inadequate to its needs.

REGULATION OF COLD STORAGE. — The Brennan bill regulating the cold storage business of the state, which was passed some time ago by the lower house of the Legislature, has now been passed by the State Senate and will no doubt be approved by the governor. Some slight alterations were made in the bill after the Senate committee on public health made a personal inspection of several of the large cold storage plants. By the provisions of the act the State Health Department is vested with authority to supervise all such plants, and the period during which articles of food may be kept in cold storage is limited to ten months, except in the case of butter, which may be kept for twelve months.

PROJECTED OSTEOPATHIC HOSPITAL. — It is reported that the osteopaths are planning to build a hospital in Manhattan and establish a clinic in Brooklyn, for which purposes a wealthy resident of the city, whose name has not been disclosed, is said to have offered the sum of $1,000,000. It is further stated, however, that these institutions will not be started until the litigation between the osteopaths and the city Health Department has been finally settled. The latter having refused to accept certificates of death from these irregular practitioners, the matter was taken to the courts, and recently the Appellate Division of the New York Supreme Court sustained the action of the lower court, which upheld the contention of the department. The osteopaths are now going to take their case to the highest tribunal in the state, the Court of Appeals, and if, as is likely, the decision there also is against them, it would seem probable that they will abandon their hospital plans.

MORTALITY STATISTICS FOR MAY. — The weekly reports of the Health Department show that during the month of May the mortality in the city represented an annual death-rate of 16.09, as against 17.54 in April and 15.61 in May, 1910. Among the diseases in which there was a decline in fatality were the following: The weekly average of deaths from scarlet fever decreased from 32.25 in April to 28 in May; the weekly average from influenza, from 11.25 to 9.25; from pulmonary tuberculosis, from 195.75 to 186.5; from acute bronchitis, from 22.25 to 19; from pneumonia, from 172.25 to 109.25; from bronchopneumonia, from 146.75 to 110.5; from diarrheal diseases, from 63 to 61.75; from diarrheals under five years of age, from 58 to 50.5; from apoplexy and softening of the brain, 28.25 to 20.5; from organic heart diseases, from 158.75 to 157.5; from appendicitis and typhlitis, from 14.75 to 12.5; and from Bright's disease and acute nephritis, from 124.75 to 100.75. Among the diseases in which there was an augmented mortality were the following: The weekly average of deaths from measles increased from 17.5 to 26; from diphtheria and croup, from 34.75 to 36.5; from cancer, from 70.5 to 76.25; and from puerperal diseases, including septicemia, from 13.5 to 17.75. With the advent of mild weather, there has been the usual decline in the mortality from respiratory diseases. Measles is unusually prevalent for so late in the season, and during the week ending May 20 there were 39 deaths from it. That week 1,368 cases of the disease were reported, and the week following, 1,459. During the month there were an unusually large number of deaths from malarial diseases, 8. Ordinarily, only one or two deaths are reported from this cause.

INCREASE OF INFANT MORTALITY. — The records of the Health Department show the rather disquieting fact that during the first four and a half months of the present year the death-rate in the city among children under the age of two years, from intestinal diseases, was nearly one third greater than in the same period of 1910. In this period in 1910 there were 709 deaths, and in 1911, 947 deaths, an increase of 32.2%. The principal cause of this increase at a time of the year when infant mortality is usually at about its lowest point is attributed by the New York Milk Committee of the Association for Improving the Condition of the Poor to the use of "loose" milk. By this is meant milk kept on sale in large cans, such as is dispensed by corner grocerymen and other retail dealers. It generally remains in the cans for a very considerable time, so that it becomes stale and loaded with an enormous number of bacteria. It may perhaps be the case that this year the percentage of humidity in the atmosphere, which naturally favors the development of bacteria, has been unusually high. It is, of course, a well-established fact that the mortality among breast-fed infants is always much less than in the artificially fed, and the milk committee's sub-committee on the reduction of infant mortality, of which Dr. Pisek is chairman, has ascertained that of the infants who died last year in New York from intestinal ailments, only 5% were breast fed. It is also believed that the low water in the city's reservoirs, in consequence of the small rainfall, may have had something to do with the increased mortality this

year, for while the numerous vegetable organisms the water contains are harmless to mature persons, they are no doubt more or less injurious to infants. Another cause of the increase has been found in the increasing practice of having young babies treated by ignorant midwives instead of by physicians, this being especially the case among the foreign population. Very commonly these women soothe the infants with narcotic drugs, and thus lower their vitality. The investigation has shown that the death-rate was unusually high in some infant asylums, especially those which farm babies out. In certain of these institutions the death-rate was as high as 68%, while in others, where special attention was paid to the quality and care of the milk used, or where the committee had established its own pure milk depots, the death-rate was considerably less than half this. In addition to its work in establishing and maintaining sixty milk stations for the summer, at a cost of $300,000, with a view to diminishing the infant mortality, the committee is exerting itself to have passed a municipal ordinance along Health Commissioner Lederle's graded-milk plan. Such an ordinance would provide that all milk sold in the city should be divided into grades and labeled according to its quality: as, for instance, "babies' milk," "drinking milk," "cooking milk."

## Current Literature.

### Medical Record.

May 27, 1911.

1. Jarvis, N. S. *The Medical Side of the Army Maneuvers in Texas.*
2. Frink, H. W. *Dreams and Their Analysis in Reference to Psychotherapy.*
3. Townsend, T. M., and Valentine, J. J. *Functional Sexual Disorders Proceeding from the Genito-Urinary Tract.*
4. Francis, R. P. *A Few Remarks on the Value of Doing Nothing.*
5. Waugh, W. F. *Herpes Zoster, Acute Poliomyelitis and Zinc Phosphide.*
6. Barnes, F. H. *Treatment of Neurasthenia.*
7. Webb, C. S. *Pneumonia.*
8. Brooks, N. P. *A Case of Transposition of the Heart.*

### The Journal of the American Medical Association.

May 27, 1911.

1. Witherspoon, J. A. *Co-operation in Establishing Standards of Medical Education.*
2. Abel, J. J., and Macht, D. L. *The Poisons of the Tropical Toad, Bufo Agua.*
3. Lyon, E. P. *Equipment and Instruction of the Laboratory Year.*
4. Fiske, T. S. *Entrance Examinations.*
5. Montgomery, D. W. *The St. Louis Hospital.*
6. Ferguson, J. S. *The Teaching of Visceral Anatomy or Organology.*
7. Herrick, J. B. *The Educational Functions of the Hospitals and the Hospital Year.*
8. Coplin, W. M. L. *A Teaching Hospital.*
9. Crehon, A. C., and Meara, F. S. *The Micrograph. A Preliminary Report: An Instrument that Records the Microscopic Movements of a Diaphragm by Means of Light Interference.*
10. McClellan, W. E. *Pulsating Exophthalmos Due to Aneurysm of the Internal Carotid.*
11. Armstrong, J. L., and Goodman, E. H. *The Excretion of Salicylic Acid and Hexamethylenamin in the Sputum.*
12. Wholey, C. C. *An Obscured Alcoholic Multiple Neuritis in a Case Apparently of Frank Opium Addiction.*
13. Acker, F. W. *Myasthenia Gravis.*
14. Muncaster, S. B. *Operation for Pedunculated Exostosis of the External Auditory Meatus.*

### The American Journal of the Medical Sciences.

May, 1911.

1. *Fetterolf, G., and Norris, G. W. *The Anatomical Explanation of Paralysis of the Left Recurrent Laryngeal Nerve Found in Certain Cases of Mitral Stenosis.*
2. *Minor, C. L., and Ringer, P. H. *Arneth's Method of Blood Counting: Its Prognostic Value in Pulmonary Tuberculosis.*
3. *Morgan, W. G. *Some Experiences with the Einhorn Duodenal Bucket and a Modified Thread Test.*
4. *Hirshberg, L. K. *Researches in Prophylactic and Anaphylactic Medicine.*
5. *Williams, W. R. *The Vaccine Treatment of Pyorrhea Alveolaris.*
6. *Ranson, S. W., and Scott, G. D. *The Results of Medicinal Treatment in Eleven Hundred and Six Cases of Delirium Tremens.*
7. *Pilcher, J. T. *The Cause and Relief of Pain in Duodenal Ulcer.*
8. *Schwartz, H. J., and McNeil, A. *The Complement Fixation Test in the Diagnosis of Gonococcic Infections.*
9. *Bailey, H. C. *Pulsations in the Peripheral Veins.*
10. *Harris, H. F. *The Diagnosis of Pellagra.*
11. *Crane, A. W. *Vaccine Therapy and a Simplified Opsonic Index.*

1. Fetterolf and Norris have collected 37 cases of mitral stenosis with left recurrent laryngeal paralysis, 11 with autopsies. The anatomical explanations of the paralysis offered by different authors have varied so widely that a special study of the anatomic relations in hardened thoraces was made. As a result of this study it is concluded that where compression is the cause of the paralysis it must be between the left pulmonary artery and the aorta or the aortic ligament. Compression between a dilated left auricle and the aorta is shown to be impossible.

2. Minor and Ringer have tested Arneth's method of blood counting as a basis for prognosis in pulmonary tuberculosis and report that they have found it distinctly helpful. The method is based upon the belief that young leucocytes with one or two nuclei are less able to combat infection than older leucocytes with more nuclei, and that patients in whose blood the proportion of leucocytes with many nuclei is large are more resistant to disease than those whose leucocytes contain relatively few nuclei. A count is, therefore, made in a stained smear dividing the neutrophilic leucocytes into five classes according to the number of their nuclei: Class I, containing one nucleus; Class II, two; and Class V, five. The normal blood picture obtained by Arneth from fifteen normal individuals was as follows: Class 1, 5%; Class II, 35%; Class III, 41%; Class IV, 17%; and Class V, 2%. An example of an unfavorable blood picture is furnished by a case of miliary tuberculosis in which the figures in Classes I and V were 36%, 56%, 8%, 0%, 0%. Minor and Ringer have studied in this way a hundred cases and report their results in tables and in a graphic chart showing a marked increase in the proportion of leucocytes with few nuclei according to the severity of the case. Instances are cited where the test proved correct, contrary to the opinion at first formed of the case.

3. Morgan reports favorably upon the use of Einhorn's so-called thread test in the diagnosis of gastric and duodenal ulcer. He applies the test as follows: A split BB

shot is fastened to the end of a No. 8 braided silk thread and enclosed in a 5-gr. capsule, the cord passing out through a small hole in one end; 75 cm. from the capsule a knot is made. For several hours before the test, care is taken not to give foods or medicines which might discolor the thread, particularly meat. At bedtime the patient swallows the capsule until the knot is at the teeth, when the end is pinned to the nightgown. On awakening, the patient pulls out the thread and hangs it up to dry. In cases of ulcer a reddish-brown discoloration is seen on the thread where it has been in contact. Twenty-five cases are reported. Of the 16 cases of undoubted ulcer, 14 gave positive reactions; of 6 cases certainly not ulcer, none gave a positive test.

4. Hirshberg reviews briefly and somewhat disconnectedly the subject of anaphylaxis or sensitization of the animal body by an earlier injection of a serum or other substance toward toxic effects of later injections of the same substance. Without clear statement of evidence he implies his belief that skin eruptions from ingestion of certain foods are manifestations of this phenomenon.

5. Williams reports strikingly beneficial results in eight cases of pyorrhea alveolaris treated with autogenous vaccines. Treatment of other cases with stock vaccines was less satisfactory.

6. Ranson and Scott contribute an important article based upon a study of a large series of cases of delirium tremens, divided into two classes, the incipient cases without actual delirium, and the fully developed cases with delirium. The distinction between these two classes is important from its bearing upon treatment. Hypnotics are first discussed. These in general appear to be of benefit in the incipient cases but to be worthless or harmful in the delirious cases with the exception of veronal. Morphine and hyoscine in these cases proved the least efficient in preventing delirium, and hyoscine further proved very dangerous. Experience with alcohol seemed to show that its use in incipient cases tended to ward off delirium but that in fully developed cases alcohol neither increased nor diminished the mortality. In delirious cases ergot is said to have reduced the mortality from 44% to 28% — a dram of the fluid extract by mouth every four hours being the usual dosage. They conclude that incipient cases should receive large doses of veronal, whisky regularly, and ergot at frequent intervals; that delirious cases should receive veronal in moderate doses and ergot.

7. Pilcher, by animal experiment, reports the demonstration of duodenal secretion of considerable amount, increasing in digestion and alkaline in approximately the same degree as the gastric juice is acid. He maintains that the pain in duodenal ulcer is due to contact of acid with the ulcerated surface, and that this alkaline duodenal secretion is the natural agent for neutralizing acidity in the duodenum.

8. Schwartz and McNeil report the results of complement fixation tests in 324 sera with an antigen prepared by the use of many different strains of gonococci. They conclude that in performing the test with this antigen a positive reaction is obtained wherever any one of the component strains is present. Thus by one test one obtains a positive reaction in the great majority of gonococcal infections. Sixteen control sera all proved negative. Sera from cases of simple acute anterior gonorrheal urethritis also proved negative. Clinically cured cases of gonococcus infection gave reactions in some cases, but in a larger proportion did not. Without considering the question decided, the belief is expressed that a positive reaction means that there exists a focus of living gonococci somewhere in the body.

9. Bailey reports a case where a venous pulse, believed to have been due to tricuspid regurgitation, was present in a varix of the leg.

10. Harris urges closer attention to the diagnosis of pellagra and raises the question whether there are not cases in which the skin eruption is not observed but which are nevertheless cases of the disease.

11. Crane's method of determining the opsonic index deserves attention from those who practice this test. By means of a rotating apparatus made from the works of a clock the washing of corpuscles is dispensed with. The process, however, does not appear to increase the accuracy and reliability of the procedure. [F. W. P.]

ARCHIVES OF INTERNAL MEDICINE.

MAY, 1911.

1. DARLING, S. T. *Oriental Sore in Panama.*
2. WOODYATT, R. T., AND HELMHOLZ, H. F. *The Use of Blood Charcoal as a Clearing Agent for Urine Containing Glucose.*
3. VOGEL, K. M. *Chloride and Water Tolerance in Nephritis.*
4. *HATTREM, N. M., AND HAWK, P. B. *Studies on Water Drinking. V. Intestinal Putrefaction during Copious and Moderate Water Drinking with Meals.*
5. *WINTERNITZ, M. C., HENRY, G. R., AND MCPHEDRAN, F. *The Determination of the Catalytic Activity of the Blood as a Clinical Diagnostic Method.*
6. PRATT, J. H., AND SPOONER, L. H. *A Study of the Internal Function of the Pancreas in Carbohydrate Metabolism.*
7. LINCOLN, M. *Tuberculous Retroperitoneal Adenitis Connecting by Sinus with the Duodenum. Report of a Case with Autopsy.*
8. NORRIS, G. W. *Synchronous Cardiac and Respiratory Rate. Report of a Case.*
9. *MILLS, L. H., AND CONGDON, E. A. *The Utilization of Fats and Oils given Subcutaneously.*

4. Hattrem and Hawk made a physiological study of the effect of water drinking on intestinal putrefaction. They find that the drinking of copious volumes of water with meals decreases intestinal putrefaction as measured by the urinary indican output. Moderate amounts of water with meals produced a less pronounced decrease. This decrease is probably due to a diminution of the activity of indol-forming bacteria following the accelerated absorption of the products of proteid digestion, and the passage of excessive amounts of strongly acid chyme into the intestine. In copious water drinking the writers found that the total ethereal sulphate output was increased coincidently with the decrease in indican. This observation favors the view that indican has an origin different from that of the other ethereal sulphates, and that they cannot correctly be considered as indices of the same metabolic process.

5. Winternitz, Henry and McPhedran report on an elaborate clinical study of the catalytic activity of the blood. They investigated the blood of seventy patients suffering from internal diseases. They point out that the oxygen-carrying power of the blood cannot be determined by estimating the hemoglobin only, for there are other oxygen carriers — oxidases, peroxidase and catalase. Catalase is an enzyme which has the power of decomposing hydrogen peroxide, but this is about all that is known concerning its function. The power of the blood to split hydrogen peroxide is influenced by the number of red corpuscles, the thyroid gland, the renal function and the action of salts, acids and alkalies. The catalytic activity of the blood of a series of normal individuals varies, but that of a single normal individual is constant over long periods of time. The catalytic activity of the blood in disease is of diagnostic value in typhoid fever, lobar pneumonia, acute peritonitis, uremia, malignant disease and disease of the thyroid gland.

9. Mills and Congdon report a series of experiments on cats in which they studied the absorption of injected oils from the subcutaneous spaces. The ultimate object of this work was the application of fat injections in wasting diseases, especially tuberculosis, in which intolerance to fats is universal. They find that olive, peanut, cocoanut, sesame, cottonseed, lard oils, unsalted butter fat and lard may be given hypodermically over a considerable period without local irritation. Oils and fats given subcutaneously are absorbed by means of the lymphatic system and eventually reach the thoracic duct. Lymphatic vessels and glands in contact with and transmitting oil for any length of time become hypertrophied and better able to carry oil. Emulsified oils and fats injected during starvation are absorbed in amounts sufficient to furnish from one half to two thirds of the full calorific requirement of the animals injected. The injection of oils subjected to lipolysis causes death, which is due apparently to the production of oleic or other acids with the possible formation of toxic quantities of soaps. Oil absorbed from the tissues after

subcutaneous injection is (*a*) burned in the body for the production of heat and energy, thus sparing the body fat; (*b*) retained as such within the organism; or (*c*) possibly converted into body fat by reconstruction in the liver. [L. D. C.]

ANNALS OF SURGERY.

APRIL, 1911.

1. *COLEY, W. B. *Injury as a Causative Factor in Cancer.*
2. *WHITMAN, R. *The Abduction Treatment of Fracture of the Neck of the Femur, with Especial Reference to the Advantages of the Semi-Reclining Posture and Changes of Attitude in Its Application to Elderly Subjects.*
3. *HARTE, R. H. *Fractures of the Shaft of the Femur with Marked Displacement.*
4. *ALEXANDER, E. G. *Fracture of the Patella.*
5. LILIENTHAL, H. *Nephro-ureterectomy.*
6. JOHNSON, A. B. *Technic of the Operative Treatment of Appendicitis.*
7. GRIFFIN, H. Z. *Diverticulitis of the Rectum.*

1. Coley uses the word "cancer" to include all forms of malignant tumors, both of epithelial and connective-tissue origin. In a paper in 1897 he reported 170 cases of sarcoma, 46 of which had histories of antecedent trauma. To this series he now adds 800 cases of sarcoma, 179 of which have histories of antecendent trauma. Synopses of the previously published 46 cases and the present 179 cases are presented showing the age, sex, type of sarcoma, site of tumor, nature of injury and interval between injury and appearance of tumor. Of these 225 cases the tumor developed within one month after injury in 117, within six months in 171. Tumors originated in bone in 105 cases, in soft parts in 120. Synopses of 52 cases of carcinoma of the breast associated with antecedent trauma are then given. In 19 of these the tumor appeared within a month after injury, in 30 within six months after injury. The histories of several cases are given in detail. Even the most incredulous must admit some of these cases are most suggestive of acute traumatic malignancy. Case 1 is in brief as follows: Man, thirty-five, spiral fracture at junction of middle and upper thirds of left humerus; x-ray shows fracture without trace of new growth, severe pain at site of fracture in few weeks; second x-ray shows well-marked tumor involving both central portion of bone and periosteum; tumor rapidly grew; five months after injury operation by Dr. Finney, of Baltimore, who, thinking amputation offered no hope of cure, did a curettement of central portion of tumor; Dr. Bloodgood reported spindle-celled sarcoma, mixed toxins given by Coley; condition improved with toxins and several curettements; Dr. Ewing reported spindle-celled sarcoma; shoulder-joint amputation one year after injury by Coley (January, 1911); patient at present well.

2. Whitman, in an article well illustrated with diagrams, photographs and x-rays, again explains the principles of his treatment of fractures of the neck of the femur by the abduction method. The procedure of application of these principles is given in great detail. The most important manipulation in the after-treatment is to draw the limb out to the position of abduction several times a day as soon as the plaster is removed. This manipulation is continued until the patient regains ability to place the limb in the desired attitude. If this be neglected, the limb assumes the attitude of adduction and flexion, a natural adaptation to weakness and discomfort. In youthful subjects in whom there is no question of the inherent capacity of the tissues for repair, end-results with deformity, disability and non-union following old routine treatment argue against the efficacy of this treatment. Whitman and others have obtained better results with his abduction method in this class of subjects. He now, therefore, advocates for the first time its application to elderly subjects. In this class the question of the inherent capacity of the tissues for repair arises and, therefore, the abduction treatment "must be considered as an experiment, to be continued or abandoned according to the indications." Owing to the danger of hypostatic pneumonia in elderly subjects, Whitman recommends the elevation of the head of the bed. This posture has the additional advantage of congesting the limb which should favor repair. Whitman has applied his method in the case of a woman of seventy-three, the mother of a physician, with excellent result (no deformity or shortening and practically no limitation of motion).

3. In speaking of fractures of the shaft of the femur in which carefully prepared x-ray plates (taken from several viewpoints) show much displacement of the fragments, Harte says, "I feel confident that there is no positive or definite line of treatment open to us except the exposure of the fragments of the bone by formal dissection and the restoration of the fragments, actually seeing the parts perfectly dovetailed back into their original position, which is positive assurance against rotary displacement and the first step toward procuring good alignment." He prefers an incision on the outer side of the quadratus femoris on the anterior surface of the thigh to one on the outer side of the leg between the line of the flexor and extensor groups of muscles. He recommends the Martin method of extension to approximate the ends of the bone for plating. All through the process of convalescence suitably applied splints and extension should be maintained to obviate the tendency to displacement.

4. Alexander analyzes 56 cases of fracture of the patella, with reference to sex, age, nature of accident, type of fracture, infection in early and late operations, and merits of absorbable and non-absorbable suture material. The only reason for not operating immediately after injury lies in the realization that our technic is not always perfect. Infection is less likely to occur six to ten days after injury. The author strongly advocates the actual suture of the bone fragments rather than approximation by suture of the fibrous expansions of the quadriceps tendon and urges the use of silver wire for this purpose. [T. W. H.]

THE LANCET.

MAY 6, 1911.

1. *HERTZ, A. F. *Goulstonian Lectures on the Sensibility of the Alimentary Canal in Health and Disease. Lecture III.*
2. *MAYLARD, A. E. *An Address on the Symptomatic Vagaries of Partial Pyloric Obstruction.*
3. DUCKWORTH, D. *A Lecture on Some Indications of Inborn Proclivity to Gout.*
4. *WILSON, T. *On the Suprapubic Transverse Fascial Incision in Gynecology.*
5. SARGENT, P. *Aneurysm of the Innominate Artery; Proximal Ligature; Recovery.*
6. MORISON, A. *On Reversible Pulmonary Crepitation in Cardiac Failure.*
7. HEILBORN, W. E. *Infant Mortality.*

1. Hertz, in the third of the Goulstonian Lectures, discusses esophageal pain, gastric pain and intestinal pain and variations in the sensibility of the alimentary tract. He sums up the three lectures and presents his conclusions in detail.

2. Maylard discusses the various symptoms of partial pyloric obstruction and their wide diversity in different instances. The points of most significance he considers to be intermittent attacks of dyspepsia coupled at times with the physical signs of gastric peristalsis or gastrectasis in often otherwise healthy patients.

4. Wilson believes that the transverse fascial incision presents many advantages over the usual longitudinal incision in gynecological operations in that there is much less risk of ventral hernia following, there is more room to work in and the appearance of the scar is more pleasing. [J. B. H.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 17.

APRIL 27, 1911.

1. KIONKA, H. *Radio-Activity of Mineral Water.*
2. ROLLY, F. *Prognosis and Course of Pneumococcus Meningitis.*
3. MAGNUS-LEVY. *Diagnosis of Gout by the Study of Purin Metabolism.*
4. WECHSELMANN. *Avoidance of Febrile Reaction by Intravenous Salvarsan Injection.*
5. HILLER, A. *The Duration of the Stay of Nourishment in the Body; Constipation and its Treatment with Warm Intestinal Infusions.*

6. SEYFFARTH. *Duodenal Ulcer.*
7. *DREYER, A. *The Wassermann Reaction in Lead Poisoning.*
8. *ROSENBERG, E. *Renal Stone Colic, Head's Zones and Herpes Zoster.*
9. SICK, P. *Old and New Methods of Hand Disinfection.*
10. BERNHARDT, G. *Experimental Investigations on the Etiology of Scarlet Fever.*
11. ULRICHS. *Pectineal Hernia.*
12. SCHEFELMANN, E. *A Protected Transplantation Knife.*
13. BARTH, C. *Uterus Elevator. A New Instrument for Correcting the Position of a Retroflexed Uterus.*

7. Dreyer tried out the Wassermann test on a series of thirty-five cases in which the diagnosis of lead poisoning was well established and in which presumably syphilis did not exist. In seven of these cases the reaction was positive. He cites this as an example of how the Wassermann test can only be used as one diagnostic factor and must be taken in conjunction with history and physical examination.

8. Rosenberger cites a case which again emphasizes the importance of Head's zones or herpes as aids in diagnosis of disease of internal organs. Zoster or tender areas in the region supplied by the tenth, eleventh and twelfth dorsal and first lumbar segments can be of considerable value in the diagnosis of kidney stone colic. [C. F., JR.]

No. 18. MAY 4, 1911.

1. FÜRBRINGER. *Treatment of Floating Kidney.*
2. *HECKER AND OTTO. *Treatise on Weil's Disease.*
3. PLESCH, J. *A New Method for Percussion of Pulmonary Apices.*
4. SCHERESCHEWSKY, J. *Diagnosis of Syphilis According to Dungern.*
5. TELEMANN, W. *High Frequency in Medicine.*
6. WALTHARD, M. *Psychic Pruritus of the Vulva and Its Treatment.*
7. ISELIN, H. *Operative Treatment of Brain Injury.*
8. HUFNAGEL, V. *The Diagnosis of Early Tubercular Injuries to the Function of the Circulation and Its Treatment.*
9. NÓDOR, H. *Acute Syphilitic Nephritis Cured by Salvarsan.*
10. ROTHSCHILD, J. *A Case of Vagitus Uterinus.*
11. POULSEN, K. *Tendon Sheath Inflammation in First Division of the Antibrachium Accompanied with Traction Periostitis on the Styloid Process of the Radius.*
12. WIND, K. *Saltpeter Poisoning and Spectroscopic Proof of Nitrites in the Blood.*

2. Hecker and Otto report in detail their studies on the disease named after Weil. This disease has occurred chiefly among soldiers and is characterized by sudden onset of general aching in head, shoulders and spine, high fever, relatively slow pulse, vomiting, constipation, albumen in the urine and enlarged liver. As a result of their studies they conclude as follows: Weil's disease occurs almost exclusively in the hot seasons of the year. It is an infectious but non-contagious disease. The course of the illness is a characteristic one but during epidemics quite atypical cases occur. At the height of the epidemic the most severe types occur in people who have worked or swum strenuously. As yet no causative agent has been found. No bacteria have been cultivated and they think it is due to a micro-organism which is carried possibly by an intermediate host. [C. F., JR.]

BERLINER KLINISCHE WOCHENSCHRIFT. No. 18.

MAY 1, 1911.

1. FINGER, E. *Doubtful After-Results in Patients Treated with Salvarsan.*
2. BINDERMAN, I. *A Case of Diffuse Hypertrophic Syphiloma.*
3. WEISS, L. *The Effect of Primary Syphilis on the Hair of the Scalp.*
4. *HAHN. *The Condition of the Lumbar Fluid in Tubercular Meningitis.*
5. HARTWICK, W. *B. Coli in the Cerebrospinal Fluid.*
6. GOTTSLIEB, J. *A Successful Case of Epigastric Hernia with Operation.*
7. GOTTSLICK, J. *A Severe Injury of the Lower Extremity.*
8. PICK, L. *Senile Atrophy in the Dog's Skull.*
9. NEUBERG, C. *The Urine after the Use of Salicylic Acid.*
10. SCHLESINGER, E., AND FULD, E. *Colorimetry by Means of Contrasting Colors, Especially in Relation to Hemometry.*

4. The author mentions two varieties of tubercular meningitis: First, the severe type where the diagnosis lies between typhoid, sepsis, miliary tuberculosis and a central pneumonia. Second, early tubercular meningitis, where the diagnosis of meningitis can be made, but it is difficult to determine the exact cause of the infection. He points out the extreme difficulty of finding the tubercle bacillus in the spinal fluid, and then offers an aid in differential diagnosis.

First, In tubercular meningitis there is a clear cerebrospinal fluid, with a lymphocytosis, either alone or accompanied by polynuclear leucocytes, the latter showing marked degenerative changes especially in the nucleus, in contradistinction to their appearance in the epidemic form.

Second, A heavy sediment, and a small amount of albumin in the spinal fluid denote some other organism than the tubercle bacillus. A small sediment and a large amount of albumin, on the other hand, denote a tuberculous infection.

A report of a number of cases, with the findings in the spinal fluid in each case, follows. [J. B. S., JR.]

No. 19. MAY 8, 1911.

1. MEYER, E. *The Psychical Condition Immediately After Injury.*
2. CASSEL. *Clinical Notes on Tubercular Peritonitis in Children.*
3. ROLLET, L. *Clinical Experiences Concerning Feeding with Albumin Milk.*
4. BRETSCHNEIDER, A. *Intermittent Lack of Co-ordination of an Arm as a Late Symptom of Sclerosis of the Arch of the Aorta.*
5. PICK, L. *Melanosis of the Mucous Membrane of the Colon.*
6. MAIER, G. *Constipation — Appendicitis.*
7. BOGROW, S. L. *Technic of the Intravenous Injection of Salvarsan.*
8. MAYER, H. *Technic of the Intravenous Injection of Salvarsan.*

DIE THERAPIE DER GEGENWART.

APRIL, 1911.

1. KRAUSE, P. *Acute Epidemic Infantile Paralysis.*
2. SCHMIDT, H. E. *The Present Status and the Future Prospects of Röntgen Therapy in Internal Diseases.*
3. *MENDEL, F. *Fibrolysin; Its Action, Untoward Effects and Rectal Administration.*
4. REHM. *Adalin: A New Sedative.*

3. Mendel sets forth the merits of fibrolysin, a compound of thiosinamin, and suggests points in its administration. It possesses, he says, a specific action on scar tissue of every kind. Anaphylaxis rarely occurs. In suitable cases the drug can be given by rectum in the form of suppositories. [L. D. C.]

IL POLICLINICO.

MAY, 1911.

MEDICAL SECTION.

1. GIANNULI, F. *A Case of Psychic Blindness (Aphasia and Apraxia).*
2. *FINGI, G. *Exploratory Craniotomy for Pathological Localization in the Rolandic Area.*
3. AGOSTI, F. *The Marks of an Organic Lesion in Epilepsy.*

2. Frinzi reports four cases which emphasize the fact that functional localization of cerebral lesions does not always correspond with autopsy findings. He considers that in certain cases where symptoms point to a lesion in the Rolandic area exploratory craniotomy is justifiable. [L. D. C.]

## Obituaries.

### EMMA W. MOOERS, M.D.

Dr. Emma W. Mooers, custodian of the Neuropathological Collection at the Harvard Medical School, died May 31, at the age of fifty-two. The immediate cause of her death was a streptococcus meningitis, secondary to an infection of the hand and subsequent septicemia.

Dr. Mooers was born in Greendale, Wis., and received her degree in medicine at the University of Michigan in 1884. She thereafter for ten years devoted herself to the practice of general medicine, in which she was eminently successful. The greater part of this period was spent in Arlington, near Boston. In 1896 she began a serious study of neuropathology, under the direction of Dr. E. W. Taylor, at the Harvard Medical School. She at once showed a peculiar capacity for the work, combined with an admirable enthusiasm, which led, after completing her preliminary studies, to the offer of positions of responsibility. She filled successfully laboratory positions in several state institutions, and in the fall of 1900 went abroad and worked in the laboratory of the Claybury Asylum near London. On returning to this country, she accepted a position at the McLean Hospital, where, associated with Dr. August Hoch, she continued to prosecute her work, particularly in the line of neuropathological technic. The fall and winter of 1903–1904 she spent with Benda in Berlin, and the following summer continued her work with Weigert at Frankfort, where she remained until after her distinguished teacher's death; she then went to Munich and studied under Kraepelin, and soon became a valued assistant in the laboratory. She was there particularly associated with Alsheimer in his important and far-reaching investigations. Her knowledge not only of her subject, but of French and German as well, made her an invaluable aid in the teaching of foreign students, and she soon made a place of importance for herself in this laboratory. During the latter years of her stay in Germany she perfected herself in the elaborate technic of the Wassermann reaction and finally returned to this country about two years ago expert in this work as well as in the broad field of neuropathology. Soon after her return she began work at the Harvard Medical School and there became associated with Prof. E. E. Southard. At the time of her death she was actively engaged in general neuropathological work and especially in the development of a laboratory for Wassermann technic. She had also very recently been appointed custodian of the Neuropathological Collection, and in general seemed finally to have obtained the position for which she had long and conscientiously prepared herself, and for which she was well fitted, both by temperament and training. Shortly before her death she had completed a piece of original work on the condition of the peripheral nerves in experimental poliomyelitis which is likely to prove a positive addition to the subject, showing, as it does, the probability of a true neuritis as a result of the infection. She was also much interested in the histology of so-called Landry's paralysis; it is to be hoped that her investigations in this field may receive posthumous publication.

Her death is not only a distinct loss to this community but also to the cause of scientific medicine in general. As a technician she was adept and thorough; in carrying out the Wassermann reaction her devotion to detail left small chance of error. It is not to be questioned that in this latter work she was one of the best prepared and most skilled students in this country. Her enthusiasm and her methods of work were admirable. It is perhaps invidious to speak of German standards, but, at the same time, one cannot deny that ideals of thoroughness have attained a higher place in that country than in this. However this may be, Dr. Mooers believed thoroughly in German methods and did not allow herself to swerve in the least from this allegiance. To know her work was to have confidence in it. For all these reasons, quite apart from her personal qualities, her death will be mourned by a wide circle both of those who knew her personally and of those who knew her only through what she had accomplished.

### HENRY CLAY ANGELL, M.D.

Dr. Henry Clay Angell, who died last week in Boston, was born at Providence, R. I., in 1829. He received the degree of M.D. in 1853 from the Hahnemann Medical College of Philadelphia, and subsequently studied for a time in Europe. On his return he settled at Lynn, Mass., and practiced his profession there for three years. He then went abroad again to study ophthalmology, and since his return had lived in Boston. He was author of a textbook on diseases of the eye, and for twenty years was professor of ophthalmology at the Boston University Medical School. He was a member of the Massachusetts Homœopathic Medical Society and of the American Institute of Homeopathy.

Dr. Angell had a strong taste for music and painting, and was himself an artist and critic of considerable ability. In an obituary notice of him in the daily press, Mr. Arlo Bates has said: "Behind the connoisseur, however, was the man who was better than all: a man of admirable sanity, of shrewd insight, of wide range, of sweet sympathies, of subtle humor, of humanity the most winning. We who knew and loved him can only feel that the memory of such a friend is more vital and lasting than companionship with the many."

## Miscellany.

### BEQUESTS TO HOSPITALS.

The will of the late Mrs. Darius Wilson, who died at Cambridge, Mass., last week, has been filed for probate at the East Cambridge court. It contains a large number of charitable bequests, among which is one of $10,000 to the Ohio Hos-

pital for Women and Children, Cincinnati. The sum of $5,000 each is left to the Children's Hospital of Boston and to the Boston Floating Hospital; $2,000 each to the Boston Nursery for Blind Babies and the New England Peabody Home for Crippled Children. It is further provided that on the death of one of the personal legatees of the will, the residue of the principal of a fund left in trust for his benefit shall be divided equally between a dozen charitable institutions, each of which will probably receive from this source about $2,500. Among the beneficiaries under this provision are the Children's Hospital of Boston, the Boston Floating Hospital, the Massachusetts Homœopathic Hospital, the New England Peabody Home for Crippled Children, and the Convalescent Home of the Children's Hospital, Wellesley Hills.

The will of the late Ann Lee, of Boston, who died on May 28, has been filed for probate. It contains a bequest of $200 to St. Elizabeth's Hospital.

## PREVALENCE OF SMALLPOX IN THE UNITED STATES.

THE weekly report of the United States Public Health and Marine-Hospital Service for June 2 presents a statement of the "prevalence and geographic distribution of smallpox in the United States during the calendar year 1909." The total number of cases reported was 24,099, with 150 deaths, but in many states the report is only partial, and some made no report at all. Complete reports from twenty-seven states, with an estimated population of 58,839,200, show a total of 19,534 cases, with 92 deaths. These figures are lower than those of the preceding year, but are regarded as "excessive when compared with those reported in other countries, and regrettable when the preventability of the disease is considered." The distribution of the disease is illustrated by graphic maps. Its prevalence appears to have been greatest in Kansas, Illinois, Utah, North Carolina and Oklahoma. Its ratio to population was by far the greatest in Utah.

## INTERSTATE CARE OF LEPERS.

IN the issue of the JOURNAL for June 1 we noted the request made by the governor of Rhode Island for special legislation by Massachusetts to permit the admission to Penikese Island of the leper recently discovered at Pawtucket, R. I. A similar request has now been made by the governor of Connecticut in behalf of a Russian leper recently found in Hartford, Conn. There seems no immediate reason why one state, having a leper colony, should not receive and care for inmates from other states not so provided. Such action would seem to be in the interests of economy, humanity and public safety. Probably the special legislation necessary to make it legal will be introduced for consideration before the General Court of Massachusetts.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MAY 20, 1911.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | 1,557 | 458 | Waltham | 3 | 1 |
| Chicago | 710 | 214 | Brookline | 8 | 1 |
| Philadelphia | — | — | Chicopee | 3 | 2 |
| St. Louis | — | — | Gloucester | 8 | 1 |
| Baltimore | — | — | Medford | 6 | 2 |
| Cleveland | — | — | North Adams | 6 | 3 |
| Buffalo | — | — | Northampton | 3 | 0 |
| Pittsburg | — | — | Beverly | 0 | — |
| Cincinnati | — | — | Revere | 2 | 1 |
| Milwaukee | — | — | Leominster | 3 | 1 |
| Washington | — | — | Attleboro | 1 | 0 |
| Providence | — | — | Westfield | 7 | 1 |
| Boston | 231 | 61 | Peabody | — | — |
| Worcester | 40 | 10 | Melrose | 5 | 0 |
| Fall River | 48 | 28 | Hyde Park | 3 | 1 |
| Lowell | 29 | 6 | Woburn | 4 | 0 |
| Cambridge | 36 | 5 | Newburyport | 2 | — |
| New Bedford | 29 | 14 | Gardner | 5 | 2 |
| Lynn | 20 | 5 | Marlboro | 7 | 1 |
| Springfield | 30 | 6 | Clinton | 2 | — |
| Lawrence | 24 | 13 | Milford | — | — |
| Somerville | 20 | 5 | Adams | 2 | 1 |
| Holyoke | 13 | 3 | Framingham | — | — |
| Brockton | 11 | 4 | Weymouth | — | — |
| Malden | 14 | 5 | Watertown | 1 | 0 |
| Haverhill | 11 | — | Southbridge | 3 | 1 |
| Salem | 14 | 4 | Plymouth | — | — |
| Newton | 10 | 3 | Webster | 1 | 0 |
| Fitchburg | — | — | Methuen | — | — |
| Taunton | 8 | 1 | Wakefield | 5 | — |
| Everett | 10 | 3 | Arlington | — | — |
| Quincy | — | — | Greenfield | 7 | 2 |
| Chelsea | 15 | 5 | Winthrop | 1 | — |
| Pittsfield | 13 | 3 | | | |

## SOCIETY NOTICES.

MAINE MEDICAL ASSOCIATION. — The fifty-ninth annual meeting will be held at the City Hall, Augusta, Me., Wednesday and Thursday, June 28 and 29, 1911.

MASSACHUSETTS MEDICO-LEGAL SOCIETY. — The annual meeting will be held at Harvard Medical School, Building A (Administration Building), Room 205, on Tuesday, June 13, 1911, at two o'clock. The annual lunch will be served at 1.30 in Room 110 of Building A. Annual reports and election of officers. The following papers will be read and discussed: 1. "Points of Medico-Legal Interest in the Glover Murder Case," George L. West, M.D., Medical Examiner, of Newton. 2. "The Murder of Frank Cusumano," John A. Peterson, M.D., Medical Examiner, of Hingham; Prof. Wm. F. Whitney, Harvard Medical School; George Burgess Magrath, M.D., Medical Examiner, of Boston.

OLIVER H. HOWE, M.D., *Recording Secretary.*

## RECENT DEATHS.

EMMA WILSON MOORES, M.D., M.M.S.S., died at Boston, May 31, 1911, aged fifty-two years.

DR. OLIVER H. ARNOLD, of Providence, R. I., died in that city last week. He received the degree of A.B. from Brown in 1865, and that of M.D. from Harvard in 1867. After practicing his profession for a few years in Pawtucket, R. I., he studied medicine abroad for a time, and on his return settled at Providence. He was associated with the department of biology and comparative anatomy at Brown University, and was a member of the American Institute of Homeopathy.

DR. CHARLES H. MAGOON, who died last week at Wakefield, Mass., was born in 1840. He was a pioneer settler of Algona, Ia., where he spent his early life raising fruit-trees. In 1865 he returned to Massachusetts, studied dentistry, and had practiced his profession ever since, chiefly at Wakefield. He is survived by his widow.

DR. FRANCIS JOSEPH WELLER, who died last week at South Boston, was born in 1862. He received the degree of A.B. from Boston College in 1888, and that of M.D. from Harvard in 1894. He was an assistant in otology at the Tufts Medical School and at the Carney Hospital. He is survived by his widow and by two children.

## Original Articles.

# OBSTETRICS IN GENERAL PRACTICE.*

BY A. WORCESTER, A.M., M.D., WALTHAM, MASS.

Some years ago I reported to this society three series of two hundred midwifery cases.[1] As a basis for this paper I now report five hundred additional cases, occurring in my practice between Aug. 8, 1894, and March 12, 1909. I shall not venture to tabulate the dry statistics of the duration of the different stages of labor or of the fetal presentations and positions, as I did with my first six hundred cases. Any yet, without more than passing reference to the normal cases, using them merely as a background for the description of what is abnormal, no idea could be given of the ordinary midwifery practice of a general practitioner.

In my clinical records I have made note of every deviation from the normal, and of all unusual occurrences. But what, we may well ask, is the normal? If the woman delivers herself, without any interference by physician, nurse or neighbor, and without any harm to herself or her child, then of course the case can be classed as normal, or at least as *accouchement au naturel*. Here is an illustration: Mrs. M., age thirty-three, according to her own story, began her tenth labor with three hard pains. She went downstairs and had four more pains, when the waters broke; then she went upstairs and had four more and found baby and placenta on the floor. Before I arrived she had tied and cut the cord. There seemed little left for me to do.

But unless the woman in labor takes to the woods, as in fact one of my patients did, she can seldom escape having her labor assisted; and such assistance is more or less an interference. Take the management of the third stage of labor, for instance. The old practice was to leave the placenta to come when it pleased. After several days of waiting, if, as occasionally happened, it showed no signs of coming, then, perhaps, something was done about it. I remember such an instance in the practice of an excellent physician of the old school. Laugh as we may at such conservative reluctance to interfere with Dame Nature, we can but admit that in the customary hurrying of the third stage by Crédé's method, which, by the way, is much to our own convenience in letting us get away, our patients occasionally do lose more blood than they should. What danger is there, then, in non-interference? None, I believe, and I wish I were able to back up my belief with more than a very few of my cases where the patient delivered herself of the placenta. In none of these cases, however, was there any trouble. The woman already referred to, who, when in labor, took to the woods, the next day walked a mile back into town, carrying her baby in arms, and was not delivered of the placenta until she had been put to bed eighteen hours after the birth of the child. There was not the least drawback in her recovery. Nor was there in an earlier case where the illegitimate mother hid her dead baby, and the next day journeyed to another state. Two days afterwards I found her in the police station, after a hundred miles of traveling, with the placenta still undelivered.

It is not my object, however, to decry the Crédé method of hastening the third stage of labor just because it is of such convenience to all concerned, but I want to point out that it is a distinct interference with nature and, therefore, should be subjected to most critical scrutiny. In my previous reports it seemed likely that the cause of the unusually large percentage of post-partum hemorrhages which occurred in my early practice lay in hurrying the delivery of the placenta. And this likelihood was increased by my being able afterwards to report a smaller percentage of hemorrhages and a correspondingly longer average duration of the third stage. But now, on the other hand, in this series the average duration of the third stage (nineteen minutes) is no longer, and yet the occurrence of post-partum hemorrhages has again decreased from 6% in my best previous report to 2% in this series. Setting aside the cases of placenta previa, there were only ten cases where as much as a quart of blood was lost. In four of these the hemorrhage followed instrumental delivery under anesthesia. In the remaining six cases the duration of the third stage was thirty minutes in one, fifteen minutes in three, ten minutes in one, and in one not noted. Happily no serious consequences followed beyond a retarded convalescence.

I believe that my better showing in this respect is due to having taken care that the uterus should be firmly held, for a longer time than I formerly thought necessary, before "fixing up." One hour of absolute rest after the baby's birth, or at least one-half hour after the delivery of the placenta, is none too much of a precaution. The only other change in my procedure has been the discontinuance of ergot, in which I have lost all faith. When not needed, it undoubtedly provokes uterine contractions; when needed, it is, in my opinion, worthless.

This discussion of the third stage may seem to be beginning the study of my cases at the wrong end, but it allows a sharper definition of my use of the word "normal." Except for this acknowledged interference with nature in the third stage of labor, 54% of my cases are definitely recorded as normal, and in 16% more I have recorded nothing to the contrary.

Although in these 350 cases I have found no unusual occurrences in either the labor or convalescence, I am not yet ready to dismiss them from consideration. For I am persuaded that excellence in the art of midwifery, even if not in obstetric science, still depends very largely upon the management of the normal case. And I confess to some disquietude of mind over the practices advocated now-a-days by the progressives, if I may so designate our brilliant obstetric specialists. But what is more presumptuous than for a general practitioner to

* Read before the Obstetrical Society of Boston, March 28, 1911.

[1] *Vide* Boston Med. and Surg. Jour., vol. cxi, p. 427; vol. cxiv, p. 28; vol. cxxxv, p. 355.

criticise the specialist! It is nothing less than a complete reversal of their respective functions. Nevertheless, in reporting one's work, even if there seems to be some defiance of modern canons, it is necessary to describe one's methods.

To begin, then, with my confessions: in my visits to pregnant patients, even if primiparæ, I have not invariably measured their pelves, their intra-uterine progeny or their husbands. Of course I have collected such data, or some of it, where there was exceptional reason, and also I am ashamed to say, where there was no reason, beyond the supposed necessity, in the patient's mind, for so doing. Fashions are infectious.

In the immediate preparation for the labor of my patients, I have so often been forced to strictest economy that I have become accustomed to doing without, and, indeed, to considering superfluous, much that I find some families acting under other advice, have provided. I have taken comfort in recognizing that after all the bringing forth new life into the world, instead of being a sickness or a cataclasm, is nature's most natural process, and that the very most I can do at such times is to help and not hinder. I have, therefore, tried to simplify rather than complicate the family enlargement problem. To this end I have given much time and strength to the training of nurses for this special service. And I have found that nurses properly taught are of immense help at such times to the physicians, the family and the patient. But I protest against some of the fads I find nurses being taught now-a-days. For instance, it is abominable to shave the patient before or during her labor, as if for a serious surgical operation. I must not, however, while describing my own methods, criticise others. And yet I want to emphasize the advantage the family physician has over the specialist in his obstetric practice, in keeping childbearing in true perspective, in maintaining its ordinary matter-of-course character. Of utmost importance is it to ward off from the expectant mother all anxiety and foreboding. Let me not be misunderstood. My own list of disasters is too long for me to ignore the dangers incident to childbearing, or to counsel the accoucheur even to forget their immanence. But these fears should never, directly or indirectly, reach the patient. And the excessive precautions and the extensive preparations now fashionable most certainly do tend to frighten pregnant women and to deter them from subsequent childbearing.

The management of the first stage of labor I have almost always entrusted to the nurse. In no other way would even a moderate obstetric practice be possible for the general practitioner. And, fortunately for him, such service can be performed by the nurse better than by any man. Not only the cleansing enema can be better given by the nurse, but also the needed cheer and comfort and reassurance. True, the physician who relies upon either his own guesswork or upon his nurse's judgment as to the probable hour of the delivery will sometimes miss being on hand. But where the child comes into the world expeditiously, a properly trained nurse can manage the delivery well enough and also give first aid in emergencies. At any rate, in my practice I have found no harm resulting from leaving the care of the first stage to the nurse. Where the babies have been born before my arrival there may have been a slightly larger percentage of perineums to repair, but probably not larger than in cases of similar precipitancy where I was in immediate charge.

When I remember how much I have tried to do for my patients in the second stage of their labors, I am again compelled to apologize for my use of the term "normal" in reporting these 350 cases where nothing unusual happened. The fact is I have been constantly trying to learn how to give most help. In the matter of posture, for instance, I have urged my patients to take what ever posture they wanted. So some have been delivered while lying on their sides, or backs, and some while on their hands and knees, and some while sitting on the edge of the bed, as is the custom among the Appalachians. When no progress is being made, I have found it a good plan to urge radical change of posture.

With few exceptions I have given an anesthetic to dull the suffering from second-stage pains. For this purpose ether is contra-indicated, except in Boston. Chloroform is much better, but not so serviceable as a mixture of it with ethyl bromide. But I need not repeat my opinions upon this particular.[1]

In trying to help on the progress of the delivery I have, of course, often dilated the cervix, flexed the baby's head and rotated it into more favorable position. I do not know how much physical help has thus been given, but I am sure that many women have been very grateful for these efforts, and also for the hot fomentations I always apply to the stretched perineum, thereby, I am sure, increasing its elasticity. But I have never found a patient appreciative of my holding back her baby's head in order to secure safer dilatation of the ostium vaginæ. It is just then that an anesthetic is of greatest service, in thus allowing the delivery of the head between pains. I am satisfied that such is the easiest way for the mother as well as the safest for her perineum. So much for my normal cases.

Of the remaining 150 cases, many have been kept out of the normal class for trivial causes. For instance, in 57 of these cases there is record of perineal laceration; but in 51 the laceration at most did not extend more than halfway to the rectum, and in some cases only a single catgut suture was required. In 2 cases the tear reached the anal sphincters and in 4 cases went through them: these were hard forceps cases. In 5 cases twins were born. This, to be sure, ought not to be considered abnormal, but it relieves the monotony of ordinary midwifery work, and sometimes demands much of the accoucheur. I shall refer to one of these cases later.

In 3 of these cases, one of the twins presented as a footling. And of the single pregnancies, in

[1] *Vide* BOSTON MED. AND SURG. JOUR., Aug. 26, 1897.

one case the hand presented, in 3 a foot, and in 5 the breech. In 5 other cases podalic version was performed. So I have in all 17 babies to account for who came into the world feet first. Four of these were stillborn, and one, an eight-months' fetus, died the following day. One of the four was a two-pound premature baby, one had no pulsation in the cord when I first examined, but 2 died because of the difficult delivery.

I dread breech deliveries more than I used to, and so I find myself employing axis traction forceps, where formerly I should have done podalic version, especially in cases of occiput posterior.

In 33 of my 500 cases the fetus was in this unfavorable position, O. R. P. in 30 and O. L. P. in 3. In only 8 of these was the labor terminated without assistance. In one, where the cord prolapsed, I delivered by podalic version. In 21, after rotating the occiput forwards, I delivered with forceps. Once I brought the head down to the vulva with the occiput posterior, and then rotated it forwards and reapplied the instruments. Once I pulled the head through face under the pubic arch, and once the baby was thus delivered by the unaided mother. Three of these occiput posterior babies were stillborn; in one the cord was not pulsating when I first examined, but forceps delivery had been previously attempted by the physician attending; in the second, though after delivery the heart beat feebly for a few minutes, the epidermis rubbed off easily and there was much meconium in the liquor amnii from the first escape of it; the third died from the delivery, apparently from strangling by the cord around its neck.

With such experience it is natural that I should consider a posterior position of the occiput as a really serious complication of labor. And in view of the almost certain prolongation of the woman's suffering, and of the great probability of her having to be operated upon eventually, I believe it best to rotate the occiput forwards while the head is above the brim, and then, if it does not so engage, I believe high forceps should be applied, and, of course, axis traction.

Besides these 21 cases just mentioned, I delivered 32 others with the forceps. Only one baby was stillborn. There had been no motion felt for two days, as I afterwards learned, but it is not unfair to assume that the child died during its exceedingly difficult delivery. Here are my notes of the case:

Mrs. B., thirty-three years old, a very stout but muscular woman, had been in labor, with at most hour intervals, for three days. I had delivered her safely twice before. After tremendous pains she brought the head to the inferior straits, in O.L.A. position, but could do no more. With forceps, which slipped off several times, I finally succeeded in delivering the head. I had even more difficulty with the shoulders, and broke one arm. The girl baby, stillborn, weighed 10½ lb. The next year I delivered her safely. But I suppose in the management of this case I am liable to the charge that I should have known the baby was too big for any delivery except by Cæsarean section. However this may be decided, it is the only one of my 500 cases where, even in the light of results, I think I ought to have elected that operation *at the time when I was first called in*. Sometimes I have wished that I had been called in earlier, as, for instance, in the case of Mrs. H., a stout, muscular woman of forty years, whom I first saw when she had been in labor for four days. She said she had been delivered twelve years before of a dead child. Her pelvis measured between the iliac crests 8½ inches, anterior superior spines 7 inches, trochanters 11½ inches, and the external conjugate 6½ inches; evidently a justo-minor pelvis. No fetal motion had been detected for two days. The os uteri was half dilated and easily distensible; the liquor amnii had all escaped; the head presented, very boggy. On passing my hand into the uterus, the very large fetus was found to be dead. Podalic version was easily done, but so small was the pelvis and so large was the child that, after one leg was delivered, it was only with greatest difficulty that the other leg was brought down. After an hour the hips, and, after still another hour of tremendous tugging, the shoulders were delivered. During these efforts the cervical vertebræ were dislocated. Of course this fetus should have been dismembered, but my instruments for this operation were twenty miles away. When I got them the head was delivered after craniotomy.

The chances of successful issue from a second pregnancy are, of course, largely dependent upon the results of the first. Where the first child is lost, in spite of all operative attempts to save it, a second pregnancy of course occasions serious misgiving. I am afraid that physicians, after failing to deliver a living child, too often have been at fault in warning such families against future pregnancies. This is ignoring the better chances in second pregnancies, as well as all possible expedients.

In September, 1902, when called in consultation, I twice failed to deliver a primipara of a living child, and in both cases in their second pregnancies I succeeded. Here are my notes:

Mrs. C., thirty-seven years old, stout and muscular, had been in labor twelve hours. The pains had slackened; the head presented O.R.P.; the cervix was only partially dilated; the cord found to be pulsating slowly and feebly. I at once dilated the cervix, performed podalic version and with great difficulty succeeded in delivering a large stillborn child. In applying forceps to the after-coming head, I made the mistake of inserting beneath instead of above the child's body, and so lost time. But I have never seen a breech-delivered child live after such hauling as was necessary. After the mother's recovery, I found on careful measurement no reason why she should not be safely delivered. The impediment in the first instance was the unyielding inelastic soft parts, not the pelvic size or shape. Fifteen months later I had the joy of delivering her safely.

The second of these patients, Mrs. R., thirty years old, had been in the second stage of labor for several hours when I was called in. Forceps had been tried in vain. I found the head presenting in O.R.P., the cord not pulsating. After rotating the occiput forwards I succeeded, after very hard pulling, in delivering a 10-lb. dead boy. Her pelvic measurements were not out of the way, and I willingly agreed to help again if needed. That time, at the end of twenty-four hours her pains had become good for nothing, the position was favorable, and my axis traction forceps (or rather Dr. Friedman's, which I value exceedingly) went on

easily, and after hard pulling I delivered a 7-lb. girl. Both times the perineum was torn through the sphincter ani.

In deference to the present fashion of delivering by abdominal section, some apology is perhaps due in reporting even successful cases of delivery *per vias naturales*, where the conditions would have warranted more up-to-date methods. But when one is off many miles from his base of supplies and from his colleagues, he naturally hesitates in explaining to the family the inestimable advantages of a Cæsarean.

Here is a case where perhaps I need not have come so near breaking my own back.

Mrs. K. admitted twenty-nine years. She had had a miscarriage in the shady past. After eighteen hours of labor the os uteri admitted only two fingers. Pains were almost continuous. Under anesthesia I dilated the cervix. And then after three hours and no engagement of the head, I applied forceps and with great difficulty delivered a 10-lb. boy without lacerating the perineum. But the mother suffered excruciating pain in the left hip and pubic arch for a long time afterwards, and also from incontinence of urine. She would probably have made a better recovery had she been delivered by more modern methods.

In spite of the opposition of the specialists to the premature induction of labor, where the pelvis does not allow the passage of a full-term child, nevertheless it is an operation that will continue to be done by general practitioners. Here, for illustration of its usefulness, are the notes of three successful deliveries of Mrs. C. by this method. She was thirty-three years old, and in childhood had suffered from hip disease, resulting in complete ankylosis of the left hip joint. Her pelvic measurements were, between iliac spines 8 inches, crests 9 inches, tuberosities 3 inches, trochanters 10 inches, external conjugate 7 inches, internal diagonal conjugate 5 inches. Five weeks before the date of her expected confinement she was admitted to the Waltham Hospital, where labor was induced by the insertion of bougies and then Barnes' dilators. After several hours of ineffectual labor, the cervix was dilated manually and the child, a 5-lb. girl, delivered with, I must acknowledge, considerable difficulty, but both mother and child did well. Exactly one year afterwards the same operation was repeated, with the same happy results, the only complication this time being the bad laceration of the cervix which required immediate repair. Four years afterwards Mrs. C. came to the hospital for the third time, and again after the same treatment she left with a girl baby. She and her three vigorous daughters have thriven ever since.

Peculiarly ungracious must it seem to report a case where the woman, already on the operating table, under full anesthesia, ready for the knife, was delivered in the old-fashioned way. But here are my notes: Mrs. J., thirty-one years old, had borne three living children. After the third she was operated upon in the Boston Homœopathic Hospital for repair of perineum and cervix and for ventral suspension of the uterus. These operations were done all right, for in her next pregnancy when again in labor her family physician could not find the os uteri, nor could a consultant summoned for the purpose. So she was brought ten miles to the Waltham Hospital for Cæsarean section. She had been having indefinite labor pains for ten days. With great difficulty I succeeded in entering the vagina with my whole hand, and then in finding the half-dilated os uteri further up and further back than would be believed possible. The child lay crosswise, its back anterior and its head to the left. I succeeded in doing podalic version and in delivering the child, a poorly developed boy who died a week after.

Eclampsia appeared or threatened in ten of my cases. In four there was a spontaneous miscarriage; in one, an epileptic, after a severe convulsion, a dead premature fetus was born; in one the threatened convulsions were averted and after a normal labor a 5-lb. girl was born; in two, after manual dilatation and delivery by podalic version, the premature child was lost; in two by the same method two were delivered alive. All the mothers did well. Here are my notes of two of these cases:

Mrs. B., twenty-six years, had gone through her previous pregnancy all right. This time, six weeks before she began her labor, noticed dimness and blurring of vision, her feet and legs were swollen, and her urine was scanty. She could not read and once had headache. She was treated vigorously with diuretics, and as the amount of urine increased the edema left her. Her labor was normal and her recovery uneventful.

Mrs. E., thirty-four years old, began her first labor at midnight March 1. In the early morning of March 3 the cervix was fully dilated but the head was not engaged after several hours of hard labor. She had been passing urine freely, and it was free of albumin on Jan. 1 and Feb. 1. Suddenly she suffered a severe convulsion. The only warning we had she gave to her mother, shortly before, telling her she saw stars. I at once delivered her, with high forceps, of a 9¼-lb. boy. She had no further trouble.

There were three cases of placenta previa. The three babies lived, but, alas, two of the mothers died and both left large families. I ought perhaps to include a fourth similar disaster, where, although I did not myself operate, I stood by advising a younger colleague. But if I should do that, I ought in fairness also to include a fifth case where I stood by giving advice where the mother was saved. As I am determined to be my own severest critic I report in detail my mistakes and failures, without excuses.

Mrs. N. consulted me in May, 1898, because she had been flowing, although only eight months pregnant, and because she had heard the week before of the death of a neighbor from placenta previa. She knew I had assisted in the delivery of that woman and that I had blamed her family for not having notified their physician of her previous hemorrhages. For Mrs. N., I made all possible arrangements. At a meeting of this society I anxiously asked advice. The only new suggestion then was to ligature the uterine arteries if nothing else would stop the hemorrhage. When my patient sent for me in June, she was flowing slightly and her labor had begun. The placenta was central, and as the labor advanced there was considerable hemorrhage. With all the advantage of an operating table, able assistants and every possible provision in the way of instruments and materials, I dug through the placenta, did podalic version, delivered a living child, and then saw the mother bleed to death in spite of everything I could do. The uterus never showed the least sign of contracting. Packing it was useless. And my deep sutures were tied round the uterine arteries too late.

In this case, of course, for the mother's sake I should have endangered the child by waiting for its natural delivery after the version. That is all very well in theory, but, after the placenta is dug through, and, of course, almost entirely detached, not to draw the child out of danger requires more nerve than I possess. If exactly impartial regard had been given to both lives, then the delivery would have been by Cæsarean section, which alone allows perfect control of the uterine arteries and may so prevent their awful outpour.

In my next case, in spite of my determination never again to employ the same methods, I did just that. But I was caught unawares. Mrs. W., thirty-eight, I had delivered three times previously. Until an hour before I was summoned she had not lost a drop of blood, but in that hour she had lost a lot. I found the vagina full of clots, the os uteri half open, the pains coming fast. I did not dare withdraw my hand, so much blood followed my first examination, but, instead, while hunting in vain for some lateral chance, I detached the placenta. There was then nothing to do except deliver it, and get out the child, which fortunately presented by the breech. I packed the uterus with towels soaked in hot 2% acetic acid. I dragged out the cervix, which was lacerated up to the vault, and stopped the spurting arteries with tendon sutures. About three pints of blood was lost during the operation, and I judged about as much before. Except for the sutures in the cervix I do not believe the mother would have lived to care for her 8-lb. daughter.

My third case was Mrs. W., thirty-nine years old, in her fifth pregnancy. I had delivered her in her first with high forceps, of a 9-lb. girl; in her second in the same way of a 10¼-lb. boy; in her third, also with instruments, of a daughter; and in her fourth confinement, of twin boys. I nearly lost her then. She was eight months pregnant, very sick with the grippe, suffering from headache and uremia and almost constant uterine contractions; her condition seemed so alarming that I decided to deliver her. I dilated the cervix, and finding a fair-sized head presenting O. L. A., I applied forceps but could not deliver it. On further examination I found a twin's head locked under the first fellow's chin. After pushing him back, the first was easily delivered, a boy of 7¼ lb. There was considerable hemorrhage, and, after the second boy, also of 7¼ lb., was delivered with forceps, face under the pubic arch, the hemorrhage was alarming. We could not get hot water because the father of the child had collapsed in the bathroom, where he lay on the floor vomiting and purging. At one time it seemed to both nurse and physician unlikely we might save even the old man. But all pulled through. And now to return to my notes of the poor woman's fifth pregnancy, two and a half years afterwards, during which, as I afterwards learned, she had had many slight hemorrhages. On the seventeenth of June, 1907, she was taken to the Waltham Hospital, having had a serious hemorrhage the day before. She was very anemic. June 20 her labor began. The pains were severe that night and there was some flowing. In the morning the os uteri admitted two fingers, and the placenta previa was found laterally attached. The cervix was dilated manually, and the large boy baby safely delivered by podalic version. The loss of blood would have been large even for one who had a good supply. The bilateral lacerations of the cervix and the lacerated perineum were sutured, and there was no further hemorrhage, but she died eight hours after her delivery. She complained of great abdominal distress which was not accounted for. There was no autopsy. I have since questioned if the uterus was not ruptured. In the following case it certainly was.

Mrs. S. had had many children, all easily enough. But one fine morning while in labor she fell to quarreling with a neighbor out in the yard. She fell to the ground, screaming with pain, and with greatest difficulty got back into her house. Her family physician, recognizing that she was doing badly, sent her in to the hospital, where, after several had seen her, I was finally called in consultation. She was then nearly comatose, surface cold, pulse thready and not countable at wrists. The only history available was that she had been complaining of severe and continuous abdominal pain. There was a slight bloody discharge from the vagina, the os uteri admitted my half hand, but the child could not be found. The diagnosis was plain. And the patient was hurried to the operating table, where my colleague, Dr. H. A. Wood, opened the abdomen. There was immediate escape of blood and clots. The child's head was found protruding into the abdominal cavity through a side rent of the uterus which was afterwards found to extend through the broad ligament so as to bare the pelvic bones. The dead child was pulled out and then the whole uterus removed. Her recovery was tedious but complete.

I have reserved for the last my two most shocking disasters, two cases of death from pulmonary embolism. In my previous reports I had also the same misfortune. Four such deaths in 1,100 cases must be unusual. The question is, were they preventable? I cannot claim that I recognized the danger as I should to-day, which means that proper precautions were not taken.

The first case was a primipara, Mrs. H., nineteen years old, who was normally delivered of an 8-lb. daughter in February, 1899. For the first week she did very well and then began having irregular chills and fever. I could find no cause for it. Her only complaint was of pain in the left leg and thigh. There was no sign of phlebitis. For several weeks this condition continued, and then before the fever or the pain wholly left her I made the mistake of letting her sit up. A few days after, while sitting in her chair reading the newspaper, she suddenly screamed, turned black, and died, before the nurse could call for help even from the household. The autopsy showed a thrombosis of the left iliac vein and an embolism of the pulmonary artery.

My second case, Mrs. L., aged thirty-three, was a dear friend and neighbor whom I had previously delivered five times. After twenty-four hours of ineffectual labor I completed the dilation of the os and, finding a hand presenting, delivered by podalic version a 9-lb. boy. Both mother and child seemed to be doing very well, except for a slight unexplained fever in the mother and some pain in her left thigh. I did not mean to let her sit up, but I carelessly had allowed her to use the commode instead of bedpan. On the fifteenth day, when sitting there, she shrieked that she was dying and turned black. A few minutes afterwards I found the faithful nurse performing artificial respiration on the corpse. There was no autopsy, but there cannot be any doubt of the diagnosis. The lesson of it is that in cases of pain in thigh or leg, where even slight fever is present, we should suspect trouble in the iliac veins, and employ the same precautions as in phlebitis of the femoral.

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The new Minnesota State Hospital for the Criminal Insane at St. Peter was formally opened on May 23, fifteen patients from the hospital at Fergus Falls being transferred to it. — *Med. Record.*

## HEXAMETHYLENAMINE AS A POSSIBLE PREVENTIVE OF PNEUMOCOCCUS EMPYEMA.

BY F. C. SHATTUCK, M.D., BOSTON.

THE very marked effect of hexamethylenamine upon the typhoid bacillus in urine; the fact that formalin seems rapidly to permeate the body fluids and tissues; the fact that the pneumococcus appears to be of less general resistance than some other organisms; and, further, the fact, as determined by Dr. Roger Kinnicutt, that very dilute solutions of formalin, 1 to 12,500, inhibit the growth of the pneumococcus in milk, afford an obvious suggestion that possibly pneumococcus empyema might be prevented by the routine administration of hexamethylenamine in cases of pneumonia. I was thus led a year ago to direct that every patient with pneumonia entering my wards in the Massachusetts General Hospital should receive the remedy. It was also given to some of the patients of my colleague, Dr. Gannett, and Drs. Kinnicutt and Barker have been so kind as to use it in their services in the Presbyterian Hospital of New York and in the Johns Hopkins at my request, in order that a larger mass of evidence drawn from different sources might be secured. To these gentlemen I wish to express my obligation.

From March 1, 1910, to March 1, 1911, fifty-nine cases of lobar pneumonia were treated with hexamethylenamine in the medical wards of the Massachusetts Hospital. This number includes only cases in which the diagnosis seemed assured. The drug was given as soon as the diagnosis was made, and the dose was 10 gr. three times a day, continued until death or well into convalescence. In three cases of young children the dose was proportionately less. The duration of illness before the drug was given varied from one to sixteen days, averaging five and one-half days. The duration of the hexamethylenamine treatment averaged twelve days. Three of these cases developed empyema.

In the first, a girl of six, the drug was given only after the temperature had fallen by lysis nearly to the normal, nine days after the onset. The pus showed pneumococci and that resulting from the operation later a few streptococci with pneumococci predominant. Recovery followed operation.

The second patient had been ailing for two or three weeks, but it was thought probable that the pneumonia began three days before entering hospital. After twenty-six days of continuous hexamethylenamine, pus containing pneumococci, streptococci and a trace of formalin was withdrawn from his chest. The patient recovered.

The third case began hexamethylenamine four days after the onset of pneumonia and continued it throughout his stay in the hospital. After twenty days, there still being signs of consolidation and slight temperature, a needle was introduced and a few drops of bloody, purulent fluid were withdrawn, showing streptococci in culture. The patient gained, soon felt very well and refused to remain longer under observation, so he was discharged without operation and lost sight of.

Of these three cases one is open to no objection, the second. In the first case, from an oversight, the drug was not given until the ninth day of the disease and pus was found four days later. In the third case the few drops obtained by aspiration seemed to be only blood until the microscope showed them to contain pus also. I have not been able to trace the patient. I do not know whether he really had an empyema or not. I include these two cases wishing to be too honest rather than credulous.

During the same period, there were forty-six cases of lobar pneumonia treated without hexamethylenamine. Three or four of these were not given the drug because moribund when brought to the hospital, and in one the pneumonia was a terminal event in chronic nephritis. In general, however, the cases were of the same class as those comprising the hexamethylenamine series. There was no selection of cases for the treatment. Of this number only one developed empyema.

In the preceding year, March, 1909, to 1910, of one hundred and forty-two cases of lobar pneumonia without hexamethylenamine, three developed empyema. Excepting in one doubtful case, no urinary disturbance could be attributed to the hexamethylenamine, although the average finding of albumin and casts was higher in the hexamethylenamine cases than in the others, as is shown by the following table:

| Year beginning March 1. | Without Hexamethylenamine. 1909. | 1910. | With Hexamethylenamine. 1910. |
|---|---|---|---|
| Number of cases examined, | 127 | 43 | 58 |
| Negative findings, | 32 (25%) | 8 (18+%) | 5 (9−%) |
| Very slight trace albumin or few hyaline or granular casts, | 81 (64%) | 17 (40%) | 32 (55%) |
| T. or L. T. or many hyaline or granular casts, | 10 (8−%) | 12 (30−%) | 15 (26−%) |
| Same plus blood free or on casts not accounted for by cta., etc., | 4 (3+%) | 5 (11+%) | 6 (10+%) |

Pericarditis, which complicated 4 or 5% of the non-hexamethylenamine cases in both years, was not observed in the hexamethylenamine series. The same is true of otitis media, which occurred in 3 to 4% of the cases not under the drug.

The mortality of cases in the hexamethylenamine series (20%) is a little lower than in the other series (25% in 1909 and 26% in 1910); but if we do not count the cases which did not receive hexamethylenamine because they were moribund, the mortality of the hexamethylenamine series would be as great or a little greater than that of the others.

The Johns Hopkins experience, kindly forwarded me by Dr. Boggs, is as follows: Between April 6, 1910, and Jan. 24, 1911, thirty-four cases

| Year beginning March 1. | Without Hexamethylenamine. 1909. | 1910. | With Hexamethylenamine. 1910. |
|---|---|---|---|
| Number of cases, | 142 | 46 | 59 |
| Recovered, | 106 (75−%) | 34 (74−%) | 47 (80−%) |
| Died, | 36 (25+%) | 12 (26+%) | 12 (20+%) |
| Died after two days or less in hospital, | 20 (14%) | 7 (15+%) | 3 (5+%) |
| Mortality, % excluding these, | 11+% | 11−% | 15+% |
| Empyemas, | 3 (2.11%) | 1 (2.17%) | 3 (5.08%) |
| Pericarditis, | 7 (4.9+%) | 2 (4.3+%) | 0 |
| Otitis media, | 4 (2.8%) | 2 (4.3%) | 0 |

of acute lobar pneumonia were treated with 10 gr. of hexamethylenamine three times a day, continued well into convalescence, the drug being started as soon as the probable diagnosis was established. In six of these thirty-four cases empyema developed. During the year April 1, 1909, to 1910, thirty-five cases of lobar pneumonia were treated without hexamethylenamine, empyema developing in only one. Both Dr. Barker and Dr. Boggs share the feeling that the incidence of empyema varies greatly from year to year, point with regard to which I have no facts on which to base an opinion. They add that in no case of their series is damage to the kidney, attributable to the drug, recorded. Messrs. Nichols and Orr, fourth-year students working in the medical clinic of the Johns Hopkins, have, after the administration of hexamethylenamine, demonstrated its presence in empyema pus, in pleural effusions and in ascitic fluid.

Dr. F. P. Kinnicutt has also kindly collaborated. Of twenty-five pneumonias under hexamethylenamine, one developed empyema. Of one hundred and ninety-three who did not take it, five had empyema. This complication, therefore, was more frequent in those who took the drug, but the number of the latter is very small. In none of the hexamethylenamine cases was pericarditis noted, though it occurred in 1½% of the others. I wish to thank Dr. Patton, house physician at the Presbyterian, for his help in this quest.

The results above reported are certainly not encouraging to the hope that in hexamethylenamine we may have a preventive for empyema, one of the most frequent, and, from the point of view of the comfort of the patient, the most serious sequelæ of pneumonia. These results, however, suggest that this drug may be a preventive of pericarditis and otitis media. Of course, it may be a mere coincidence that neither of these complications developed in the hexamethylenamine cases, but the contrast between the two series leads me to continue the use of the drug, and thus perhaps to arrive at more definite conclusions.

## "FIBROSITIS" AS A CAUSE OF CHRONIC HYPERTROPHIC SPONDYLITIS, AND POSSIBLY WITH A HERETOFORE UNDESCRIBED SIGN IN INTESTINAL AUTO-INTOXICATION.

BY N. S. YAWGER, M.D., PHILADELPHIA.

(*From the Department of Neurology in the University of Pennsylvania.*)

Having studied a considerable number of cases of chronic "rheumatic" myositis [1] and having observed in these cases many instances where the skin, fasciæ, fat and periosteum as well as muscles were involved, and also finding tenderness and stiffness quite commonly present about the spine in many persons in whom other parts were affected, it has seemed to me that chronic hypertrophic spondylitis is often but the spinal localization of a very common general condition, and which, in a mild degree, is quite frequently present. In many instances these various manifestations appear to have a common cause, this being auto-intoxication of intestinal origin. Indeed, such an origin for arthritis deformans has been frequently mentioned by writers, and notably in this country by McCrae,[2] Richardson[3] and Goldthwait,[4] but perhaps heretofore it has been more conservatively expressed.

That this hypertrophic spondylitis existed in the ancients is proven by the adventitious osseous formations found about the spine in skeletons that have been preserved through ages; and that this arthritis is of undoubted frequency in a varying degree is readily proven by the condition being observed in the dissecting-room and by the common appearance of spurs and more extensive osseous formations about the spine as shown by skiagraphs.

Frequently these spurs are so placed as to give rise to no symptoms whatever, but they may interfere with the spinal articulations and at times even impinge upon nerve roots. And depending chiefly upon this nerve root impingement, two types of so-called rhizomelic spondylosis were described. When nerve root symptoms were prominent, the case belonged to the group described by Von Bechterow;[5] if the nerve roots escaped or were but slightly impinged upon; we had the type of Marie-Strumpell,[6] where to the spinal affection was added involvement of some of the major articulations. The difference between these types depended largely upon the site and extent of these adventitious osseous formations. It would seem, then, that, in addition to these two types, many irregular forms might be expected, and this is in accordance with a large number of cases that have been reported. There really are no distinct types of the disease. The feeling of the most careful observers is that the term "chronic hypertrophic arthritis" is the best heading under which to group these various forms.

In an endeavor to maintain my former statement, that I believed hypertrophic spondylitis often to be but part of a very common general condition, I shall go back to the earliest literature obtainable upon this subject. About 1816, Balfour,[7] an English physician, was treating many gouty and rheumatic patients by friction, compression and percussion; he believed the trouble to be chiefly resident in the connective tissue, but

I do not know of his having found and described the indurations of which mention is now to be made. It probably was Froriep [8] who first recognized thickenings of this nature in the periosteum, although I am not aware of his having observed any special areas along the spine. Froriep spoke of these thickenings as *rheumatische Schwiele*, and found the condition present in the skin, fasciæ, muscles particularly, and in the periosteum. But few persons appear to know of a highly instructive volume by this German physician, published in Weimar in 1843, and in which he gives most careful clinical records of these "rheumatic" areas in more than eighty cases, telling of their development in many parts of the body. He labored a long time to establish the diagnostic value of the "rheumatic" induration. Froriep said,[9] "To find a new and hitherto undescribed symptom in a complaint of such common occurrence seems nearly impossible; yet in other things how frequently it happens that something is pointed out which has escaped previous observation, and then every one is surprised that he should never have noticed it!" More than half a century has elapsed since then and we are only beginning to recognize its importance, and although for more than fifty years the Swedes have had excellent manual methods for the removal of these areas, it remained for Edinger,[10] the German neurologist, to impress upon the profession outside of the Scandinavian countries the importance of these areas in the production of headache. This physician never failed to acknowledge the debt he owed to the Swedes, from whom he learned of this condition. And, strangely enough, Norström, one of the Swedish physicians whom Edinger mentions, spent some time in this country a few years ago, when he called our attention to the frequency of the condition and very explicitly explained to us the method of treatment. While here, Norström contributed a series of articles on massage to the New York medical journals, and considered the subject more scientifically than any American physician who has yet written upon the manual method of treatment. Unfortunately for us, we have not yet learned the lessons he taught.

For want of a better name, these areas have been termed "rheumatic," but not in the sense that they are the sequelæ of acute inflammatory rheumatism, although occasionally they may be. The term "fibrositis" suggested by Gowers [11] seems to be the best that has yet been offered, though special names indicating the sites of the indurations are useful. In this connection Gowers speaks of "cellulitis" and says, "But we apply the word to those conditions that are hyperplastic in nature and produce induration or suppuration. I think we need a designation for inflammation of the fibrous tissue which has no such results and yet, we cannot doubt, is of this nature. We may conveniently follow the analogy of "cellulitis" and term it "fibrositis."

A new and popular work says of the *induration* as a foci of *chronic myositis*, "But there are, as far as I know, no histological examinations on which to base such a term!" This pathology has been written about in Sweden, Germany, to some extent in England, and it has been discussed, though somewhat superficially, in this country. Briefly stated as typified by involvement of the muscular structure, there is in the beginning a serous exudate, or, in the more severe cases, a serofibrinous exudate; in the chronic areas, an increase in the intermuscular connective tissue and round cell invasion is observed, while the muscular fibers frequently show more or less distortion.

Of course it is important to distinguish between a stiff back due to adventitious osseous formations and that due to chronic muscular rheumatism, and this may be done with the administration of an anesthetic, when the latter condition yields readily, while the former remains unchanged. A skiagraph will also help to clear up the diagnosis.

Somewhat analogous, though resulting from an acute disease, is the frequent development of typhoid spine in cases of typhus abdominalis; from the careful observations of McCrae [12] and others, this spinal condition seems to be largely a spondylitis.

The upstart and irregular school of mechanotherapy styled "chiro-practic," which, theoretically at least, differs from osteopathy, claims as a basis for its work a partial occlusion of the intervertebral foramina through displacements of the vertebræ; they make the ridiculously absurd assertion that this is the cause of over 90% of all diseases. It may be that quite often there is present a slight constriction at these foramina, but I feel that this is most probably due to proliferation of the periosteum ("fibrositis") surrounding these openings and giving rise at times to nerve root symptoms. Long,[13] at a necropsy upon a patient who had died of pellagra, actually found this condition present and was unable to pass a Japanese toothpick through foramina which should have admitted a much larger body; radiographs from other patients likewise showed involvement of the spinal foramina. Others have observed the same narrowing of these orifices in spondylitis deformans. The ligaments are sometimes involved and osseous formations have also been found within the vertebral canal.

Many years ago, Geheimerath Oldevig was conducting a private institute at Dresden; his treatment consisted of the manual method and hydrotherapy. He was most painstaking in his work, often spending hours in the physical examination of a patient. For his exceptional skill he was accorded the highest medical honor that was bestowed by the king of Saxony. Oldevig repeatedly called the attention of his pupils to the presence of tender and thickened areas on the lateral aspects of the lumbar vertebræ, in patients who had suffered long from chronic indigestion. Upon palpation, I have found a thickening of the periosteum, with tenderness about the dorsolumbar spine, in a number of patients who have shown the symptoms of intestinal auto-intoxication. The abdominal symptoms which these cases usually present are constipation, flatulency

and often more or less tenderness and rigidity of the abdominal wall; after this rigidity has been overcome by skillfully performed massage, deep pressure will then usually reveal the presence of very tender areas within the abdominal cavity; to me, the exact location of these areas is an exceedingly interesting problem, and the fact that they can often be removed by massage, thereby causing a marked improvement in the general condition of the patient, should be a matter worthy of our most serious consideration.

Undoubtedly the thickened and tender areas upon the vertebræ often undergo absorption, but if they recur, and remain sufficiently long, there may be proliferation of the periosteum, leading to the osseous formations seen in skiagraphs and met with in the cadaver, and which we know are most common in the dorso-lumbar region of the vertebral column. So far as I know, this observation has had no special mention in medical literature, but it is possible that Rose [14] has observed the same local condition in women suffering from backache; he speaks of this as being due to a chronic periostitis of the spinal processes, generally of the lumbar or sacral, and asserts that the affection is easily recognized by pressure with the finger along the spine; he further states that he has had over thirty years' experience with this particular affection, but, except Dr. A. Jacobi, who first called his attention to it, that he knows of no physician who has written or spoken about it. He asks how many women may be treated, often heroically, for uterine trouble who suffer from this chronic periostitis.

It is interesting to note the association of this subject with dentistry; dentists have long known of the occurrence of pyorrhea alveolaris in persons who were either gouty or rheumatic. In some of these cases osseous formations have appeared upon the teeth; sometimes they are known as calculi, and other forms are scaly in nature. When we recall that the teeth form articulations with the alveolar sockets, and that the roots of the teeth are covered by a modified periosteum made up of fibrous tissue, it is not surprising that a "fibrositis" should be set up in this membrane and at times lead to the development of osseous formations similar to those found along the spine and about other articulations.

The disease, otosclerosis, meaning a progressive middle-ear disease in which the chief pathologic feature is the formation of an osseous deposit, in some subjects may be due to this condition.

It appears that the usual factors concerned in the formation of these areas may be trauma, refrigeration and dampness, and perhaps some poisonous substance elaborated within the body.

Because of the number and variety of movements which the spine is called upon to perform, this part is particularly liable to injury; we know that the lumbar and cervical regions of the spine have the greatest range of mobility, and these are sites where hypertrophic osseous tissue so frequently develops, admitting the presence of some poisonous substance in the circulation, it could readily cause irritation of this injured tissue, and if continued sufficiently long, lead to hypertrophic bony formations. The artificial production of callus by the injection of fibrin beneath the periosteum has recently been reported by Bergel,[15] and a familiar example of the ease with which osseous tissue is produced is recalled in the callus that forms after fracture.

The effect of cold and dampness is such a common experience, as when a cold draft strikes the back of the neck, and the pain and stiffness which follows unfavorable weather conditions, as to need but little mention. This effect is by no means limited to the muscles, for the periosteum is frequently involved. I am aware of the incredulous attitude of some physicians towards such effects from refrigeration; but how illogical for such an one to admit that he has not even recognized the condition of indurative headache, "perhaps the most common form of headache."

As to the presence within the body of some circulating poisonous substance, I recall a number of instances in which indurations in the skin, fasciæ and muscles were being broken up by vigorous massage, where the patient failed to keep up good elimination through the bowel, kidneys and skin, that headaches were felt, and neuralgic and rheumatic pains complained of in different parts. In one case which I have referred to elsewhere,[16] a typical attack of gout in the metatarso-phalangeal articulation of the great toe appeared to be precipitated in this way; the pain, redness and swelling, which developed so suddenly, had never been experienced before, nor has it been followed by any similar attack. It is true that no such poisonous substance has yet been isolated, but it may be similar in nature to some of the toxic matter which we believe so often slowly produces general arteriosclerosis. These cases frequently have arteriosclerosis before old age overtakes them, and the change in the vessel walls in the first stage of arteriosclerosis is similar to that so often observed in the chronic indurations met with in the connective tissue in many parts of the body.

Another possible cause, and one worthy of most careful consideration, is micro-organisms; and it may be that, later, various organisms will be shown to be directly responsible for the development of some of these indurations.

These various causes may or may not all be responsible for the production of hypertrophic osseous tissue present about the spine; but that a thickening exists, and that tenderness and sometimes pain can be elicited by pressure with the fingers over these areas, there is no doubt; and, finally, if these areas are not absorbed, I believe they often lead to the adventitious osseous tissue seen in skiagraphs and met with at necropsy.

The study of this low-grade inflammation in the connective tissue is big with possibilities. Its importance in the muscular system alone may be realized when a recent writer [17] considers it "an every-day affection" and says, "So much for a brief historical survey of what I consider to be the most neglected subject in the English literature of to-day."

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## THE TREATMENT OF GASTRIC HYPERACIDITY WITH HYDROGEN PEROXIDE.

BY G. W. HALL, M.D., BOSTON.

*(From the Out-Patient Department of the Massachusetts General Hospital, Service of Dr. A. K. Stone.)*

IN 1908 Petri published the result of his investigation upon the influence of $H_2O_2$ upon the secretion of HCl in the stomach. He found that the administration of 300 ccm. of a $\frac{1}{4}$ to $\frac{3}{4}$% solution of $H_2O_2$ in cases of gastric hyperacidity with pain led to a disappearance of the pain, together with a marked decrease in the amount of HCl, even to its complete absence.

It is well known that sugar decreases the amount of HCl present in the stomach, while oil exerts even a greater effect, but Petri found a much greater decrease after $H_2O_2$ than after sugar or oil. Although, according to v. Alder, with a decrease in the amount of HCl there is a corresponding loss of pepsin, Petri found no diminution in the pepsin when the HCl had been markedly reduced by the $H_2O_2$.

His results have been fully confirmed by Goodman, Poly and Kato.

Goodman gave $H_2O_2$ to eleven patients with excellent results. He used a teaspoonful to a glass of water, approximately 200 ccm. of a $\frac{1}{2}$% solution. In every case the symptoms disappeared and the amount of HCl was much diminished.

Poly, in a very thorough investigation, using 300 ccm. of a $\frac{1}{2}$% solution, found a rapid disappearance of symptoms with decreased amount of HCl in mild cases (.17 to .22%) after three or four doses, and in severe cases (.24 to .36%) after ten to fourteen doses. Only two patients requiring more than fourteen doses.

That the effect is not permanent is shown by the fact that in one case where there was no free HCl after taking $H_2O_2$, this returned in ten days to .05% and in three weeks to .10, where it remained. The symptoms do not return, however, at least for a long time, one patient being entirely free from pain after one and one-half years.

Both Petri and Poly substituted Merck's magnesium perhydrol, for a solution of $H_2O_2$ with practically equally good results, Poly finding that some persons objected to the taste of the water solution gave the $H_2O_2$ in milk of almonds.

Kato's work corroborates that of former investigators, but he also found an increase of HCl where it had been previously absent. He used, in most of his experiments, oxygar, a combination of $H_2O_2$ and agar.

There is considerable doubt as to the manner in which the $H_2O_2$ produces these results. Both Petri and Poly found an increased secretion of mucus after its administration and ascribe the decreased HCl to neutralization by the alkaline mucus.

Togami in animals found an increased secretion of mucus, as did Kocco. But, as Goodman points out, an increase in the alkaline mucus cannot account fully for the result because the HCl secretion remains low after the $H_2O_2$ is stopped.

This method of treatment was tried in 30 cases during the service of Dr. Stone in the Out-Patient Department of the Massachusetts General Hospital.

We selected those patients who complained of distress or pain, referred to the stomach with other symptoms of hyperacidity. In the majority of our cases the percentage of acid is little if any above normal, but they were regarded as hyperchlorhydria where the normal or more acid was present with burning pain or distress coming on some time after eating, or where there were typical hunger pains.

Owing to the difficulty in getting patients to submit to a test meal or to subsequent test meals, the cases have been divided into three groups. In Group 1 are included those who had an initial test meal with subsequent test meals after taking hydrogen peroxide; in Group 2 those who had an initial test meal without subsequent stomach examination; and in Group 3 those who were treated wholly symptomatically.

In every case but one there was some degree of constipation which was treated by giving the patient a teaspoonful of Carlsbad salts in a glass of hot water before breakfast. A teaspoonful of $H_2O_2$ in a glass of water was given after each meal, and the patients told to eat three meals a day, and anything they wanted.

In judging results, attention was directed chiefly to the symptoms, the patient's own word being taken as to whether he was worse, better, or well; to the gain in weight; and in Group 1 to the change in the amount of hydrochloric acid present.

Group 1 includes fifteen cases. In every case but one the hydrochloric acid, both free and combined, was diminished after taking the peroxide. In three cases, there was no free HCl. In every case but one there was a gain in weight of

Group 1.

| Case. | Stomach symptoms. | HCl before treatment. | HCl after treatment. | Weight before. | Weight after. | Difference. | Results |
|---|---|---|---|---|---|---|---|
| 1. | Pain relieved by food. Gas. | .10 .28 | .07 .16 | 179 | 181 | 2 | Entirely relieved. |
| 2. | Severe cramps and dull boring pains. No relation to food. | .27 .30 | .21 .30 | 125 | 131 | 6 | Entirely relieved. |
| 3. | Severe continuous pain. Temporarily slightly relieved by food. G +. | .29 .34 | .22 .40 | 165 | 163 | 2 | No benefit. |
| 4. | Pain temporarily relieved by food. Much gas. | .16 .26 | None .21 | 134 | 137 | 3 | Entirely relieved. |
| 5. | Pain relieved by food. Sour eructations. | .18 .32 | .12 .21 | 121 | 122 | 1 | Entirely relieved. |
| 6. | Burning pain two hours p. c. relieved by food. Vomiting. | .14 .37 | .14 .25 | 128 | 129 | 1 | Entirely relieved. |
| 7. | Gnawing pain relieved by food. Tarry stools. Ulcer. G −. | .28 .36 | .23 .29 | 174 | 175 | 1 | Entirely relieved. |
| 8. | Dull gnawing pain partly relieved by food. | .11 .28 | .10 .23 | 135 | 145 | 10 | Better. Medicine not taken regularly. |
| 9. | Pain relieved by food. Gas G −. Inactive ulcer. Tarry stools. | .16 .24 | None .25 | 128 | 132 | 4 | Entirely relieved. |
| 10. | Continuous vomiting. Pain partly relieved by food. | .24 .28 | .09 .21 | 168 | 179 | 11 | Entirely relieved. |
| 11. | Gas and pain at first relieved then increased by food. | .16. 40 | .18 .29 | 141 | 152 | 11 | Very much better. |
| 12. | Gas and vomiting. Pain partly relieved by food. | .25 .30 | None .28 | 134 | 136 | 2 | Very much better. |
| 13. | Continuous pain. Burning sour eructations. | .11 .27 | .04 .14 | 150 | 155 | 5 | Entirely relieved. |
| 14. | Pain partly relieved by food. Much gas. | .49 .72 | .18 .25 | 140 | 149 | 9 | Very much better. |
| 15. | Pain two hours after meals. Vomiting. | .20 .40 | .12 .24 | 187 | 198 | 11 | Entirely relieved. |

from one to eleven pounds, the average being about six and one quarter. Ten patients reported an entire relief from their symptoms, three were very much improved, and one better. The latter, Case 8, did not take the treatment regularly. Case 3 appeared worse, if anything, with no diminution of the hydrochloric acid, and a loss of two pounds in weight. This patient had an active gastric ulcer with constantly positive guaiac test and marked mental symptoms.

Cases 7 and 9 both had inactive ulcers. They gave a history of tarry stools, and both had some degree of gastric stasis, but at the time they came under treatment neither gave a positive guaiac test with either gastric contents or stools. Both were entirely relieved by the peroxide.

Group 2 consists of ten cases. While an initial test meal was given, for various reasons no subsequent examination of the stomach contents was made. In every case there was a gain in weight of from one to seven pounds, the average being three and two-fifths pounds. Seven cases were entirely relieved and two were very much better.

Case 5 was not benefited. This patient undoubtedly had an active gastric ulcer with a positive guaiac test.

Group 3 consists of five cases, whose symptoms were those of hyperacidity. No examination of the stomach was made.

Each patient gained in weight from five to twelve pounds, the average gain being seven pounds.

Three patients were entirely relieved and two were very much better.

In connection with Case 3, Group 1, and Case 5, Group 2, both of whom had active gastric ulcers and were unimproved, it is interesting to note that Nowikoff suggests the failure to improve after taking hydrogen peroxide as a means of differential diagnosis between ulcer and hyperchlorhydria.

Group 2.

| Case. | Stomach symptoms. | HCl | Weight before. | Weight after. | Difference. | Results. |
|---|---|---|---|---|---|---|
| 1. | Pain. Gas. Vomiting. | .21 .25 | 129 | 136 | 7 | Entirely relieved. |
| 2. | Gnawing pain relieved by food. Vomiting. | .14 .22 | 159 | 162 | 3 | Entirely relieved. |
| 3. | Vomiting. Pain at first relieved then increased by food. | .19 .28 | 118 | 119 | 1 | Very much better. |
| 4. | Pain begins one hour p. c. Continuous at night. | .13 .27 | 146 | 149 | 3 | Entirely relieved. |
| 5. | Pain relieved by food. Cramps. Gas. G +. Ulcer. | .17 .25 | 145 | 146 | 1 | Unrelieved. |
| 6. | Pain and cramps. Gas. | .16 .27 | 137 | 142 | 5 | Entirely relieved. |
| 7. | Continuous sharp pain. Gas. | .24 .33 | 145 | 148 | 3 | Entirely relieved. |
| 8. | Dull gnawing pain. | .10. 21 | 132 | 134 | 2 | Very much better. |
| 9. | Pain uninfluenced by food. | .18 .45 | 161 | 166 | 5 | Entirely relieved. |
| 10. | Continuous pain worse at night. Gas. | .22 .38 | 170 | 174 | 4 | Entirely relieved. |

Group 3.

| Case | Stomach symptoms. | Weight before. | Weight after. | Difference. | Results. |
|---|---|---|---|---|---|
| 1. | Gnawing pain relieved by food. Gas. | 144 | 149 | 5 | Entirely relieved. |
| 2. | Burning pain. Sour eructations. | 154 | 160 | 6 | Entirely relieved. |
| 3. | Gnawing pain relieved by food. Gas. Vomiting. | 134 | 146 | 12 | Entirely relieved. |
| 4. | Gnawing pain relieved by food. Vomiting blood. Ulcer. | 196 | 201 | 5 | Very much better. |
| 5. | Gas with sharp pain and occasional vomiting. | 154 | 161 | 7 | Very much better. |

CONCLUSIONS.

While the results here are not quite so good as those previously reported, they do show:

First, That $H_2O_2$ diminishes the amount of hydrochloric acid in the stomach.

Second, That those patients with hyperchlorhydria get great or total relief from their symptoms.

Third, That there is a gain in weight.

Fourth, That it does not appear to benefit cases with active ulcer; and

Fifth, That this method of treatment is a useful addition to the methods already in use, in the treatment of hyperchlorhydria.

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## Clinical Department.

### A CASE OF VERTIGO CURED BY TREATMENT OF THE EUSTACHIAN TUBE.*

BY EDGAR M. HOLMES, M.D., BOSTON.

IT has been known and generally accepted for a long time that vertigo may be due to middle ear conditions depending upon a diseased tube. Many such cases have been observed and reported.

This case I am reporting is of special interest in that the symptoms were severe and of long duration while under the usual treatment and because so few treatments of the Eustachian tube entirely relieved the condition. It was diagnosed by the men on duty at the Boston Dispensary six months before I saw the patient as one of probable middle ear origin, as the tests for labyrinthine disease were not present.

Dr. Inglis, who first examined this patient, saw her after she had been dizzy for three months, and her condition had grown progressively worse. She was fifty-two years old and married, and her first symptoms began sometime in March of 1910. Following a cold in the head she became quite deaf for a few days and there was also a feeling of fullness in both ears, there was also slight pain in the left ear. A low rumbling tinnitus began about one week after the first symptoms and continued for a number of weeks, when it gradually subsided. There was slight vertigo noticed soon after the beginning of the ear symptoms, and this condition grew gradually worse. The patient was compelled to carry the head perfectly level and could not look down upon the street nor stoop to lace her shoes without a violent attack of vertigo. She had the feeling of pitching forward.

When she was first examined at the Dispensary it was found that both membranæ tympani were retracted and thickened.

The records show that she was treated regularly by catheterizing the Eustachian tubes from Sept. 8 until Jan. 5, when I first saw her. There had been no apparent improvement, temporary or permanent. As the patient entered the room her effort to maintain her equilibrium was apparent. She was well nourished but her expression was somewhat careworn. The pulse was 82 and normal. Both pupils reacted normally to light. The patellar reflexes were normal. The tongue was clean and she said she had no stomach or bowel trouble. I examined and found the same middle ear signs as had been found by Dr. Inglis six months before. Both membranæ tympani were retracted and thickened, but they were movable by Siegle's otoscope. The hearing was

| | | | | | |
|---|---|---|---|---|---|
| R | $\frac{a}{b}$ 18 | 20 | $\frac{a}{14}$ | 21 | |
| | C | C′ | C″ | C‴ | for forks |
| L | $\frac{a}{b}$ 16 | 19 | $\frac{a}{17}$ | 22 | |

and she could hear the whispered voice about four feet in either ear.

The Webber test was negative. The rotating and caloric tests were negative. An examination of the nose showed nothing abnormal, but the nasopharyngoscope showed an interesting condition in the nasopharynx.

The right Eustachian tube was moderately swollen and injected but apparently showed normal movements during deglutition. The left tube was much swollen, the blood-vessels were dilated and there was much restriction of the movements in the floor of the tube during deglutition. The posterior boundary of the left Rosenmuller's fossa was in contact with the cushion of the Eustachian tube, but there were no adhesions between them.

Inflation with the catheter produced a bulging of the membrane but gave no relief from the dizziness. I began making applications of argyrol within the tubes, more to see how much we could relieve the local inflammation than believing we could relieve the severe vertigo. These applications were made every other day and after the fourth application had been made the patient said that she was better than she had been for nine months. At the end of ten days the vertigo was gone and no movements of the head could produce an attack. She could stoop and pick up articles from the floor with no inconvenience. The swelling in and about the left Eustachian tube was very much reduced and the membranæ tympani had lost the marked retracted appearance.

The treatment was continued until March 16, for although there were no remaining symptoms, the mucous membrane of the tubes was somewhat swollen and inflamed. At the present time both Eustachian tubes are apparently normal and so far as symptoms go the patient is entirely well. The hearing has increased to

| | | | | | |
|---|---|---|---|---|---|
| R | $\frac{a}{b}$ 29 | 34 | $\frac{a}{14}$ | 32 | |
| | C | C′ | C″ | C‴ | |
| L | $\frac{a}{b}$ 25 | 31 | $\frac{a}{17}$ | 31 | and whispered voice to 10 feet. |

This case has been of particular interest in that the symptoms had grown worse under the usual treatment and had become so severe as to incapacitate the patient for all work and that so few treatments of the tube produced a cure. Without the aid of the 'scope it would have been impossible to have determined the condition of the tubes, neither could we have applied treatment directly under vision without some such instrument.

One important point in the treatment is to cause no trauma of the mucous membranes. The Eustachian applicator should be very carefully constructed and should be very gently pushed into

* Read at a meeting of the New England Otological and Laryngological Society, March 28, 1911.

the tube. By watching carefully the tip of the instrument as it enters the field of vision of the 'scope it can be directed as easily and gently as if it were being passed into a crypt of the tonsil under direct guidance of the eye. After it has entered the lumen of the tube it is under the direction of the sense of touch, but even then it is of importance to watch the tip of the catheter and see that it is kept in contact with the orifice of tube and that no undue force is brought upon it.

In regard to the best drugs for use in the treatment of inflammation of the Eustachian tube, our experience is too limited to say anything at all positively, but of those we have used we have found that a 15 to 20% of argyrol has given the best results, not only in the acute, but also in the chronic cases.

I do not believe that by this treatment we shall be able to relieve all cases of tubal inflammation, nor will it be likely that all chronic middle-ear diseases whether producing vertigo or not will subside when the tube has been restored to its normal functions, but what we can do is to examine and treat all cases under the guidance of the eye.

This is a great step forward and I believe we shall all achieve results which were impossible under previous methods.

## A CASE OF NERVE DEAFNESS DUE TO THE TOXEMIA OF DIABETES.

BY WM. H. MERRILL, M.D., LAWRENCE, MASS.

As the patient whose case will be reported tonight still has a use for his temporal bones, it would have been well for me to have asked our secretary to place an interrogation point after the title of this report.

An attempt will be made to convey as accurately as possible by words the symptomatology, but at best these will be unsatisfactory data from which to ask the members to agree or disagree with the diagnosis.

When first the diagnosis of a toxic neutritis was made, the writer had a feeling of disgust in having a patient under observation for eight weeks with obscure aural symptoms and not having made a diagnosis which seemed so easy after an urinary analysis had been done.

A later examination of such textbooks and journals as were accessible failing to reveal any mention of diabetes as a cause of auditory neuritis was something of a comfort. A number of writers mention a paralysis of the seventh nerve due to neuritis as an occasional complication of diabetes. The close proximity of the origin and preliminary course of the seventh and eighth nerves would suggest the possibility of a simultaneous involvement, but no facial paralysis was noted in the case of J. B., who was referred to me June 17, 1910.

Family history meager and negative.

Personal history of smallpox and scarlet fever before age of twelve. No pain or discharge from ears is remembered.

Present condition, male, age fifty-five, weight 160, attendant at a county institution. No general symptoms of sufficient importance to attract attention of the physician who referred him. Deaf in right ear twenty years; does not remember manner of onset, but thinks there has been no tinnitus. He was not aware of any deafness in left ear until morning of June 2, when was so deaf when awakened by member of family that only a shout could be heard.

There was no dizziness or nausea. A little dizziness on stooping had been noticed for a month previous to the attack. This is not present now. Patient was treated by Pollitzer inflation for a week or two by a general practitioner and a little improvement in hearing was noted during this time.

Both membranæ tympani moderately retracted and lacking somewhat in luster. The right has small area of calcareous degeneration. Both ears are readily inflated with catheter but without improvement in hearing.

Hearing test as follows:

| | Right. | Left. |
|---|---|---|
| Watch, | O. | C. less distinct on mastoid. |
| Voice, | Shout at 1 ft. | 5-40 (loud voice). |
| A. C., | 512 not heard. ? | 10. |
| B. C., | Not heard. | 5. |
| Lower, | 512. ? | 256. |
| Upper, | 1. | 1. |

.4 is normal on my Galton whistle. Rotation tests and hot water in left ear applied March 23, 1911, showed normal nystagmus.

Hearing tests were made at intervals of eight or ten days, which showed little change on the whole from the above, but it was noted that the perception varied much at different periods of the same setting. This variability being one of the symptoms mentioned by authors as denoting hysteria, a search was made for some stigmata or history of this disease with negative results.

About a month after coming under observation Dr. Amadon saw Mr. B. and cleaned out the fossæ of Rosenmüller.

July 20 an analysis of urine was made which disclosed a spg. of 1,035 and a large quantity of sugar, no albumin, quantity 4,009. At this time the patient would not admit to having symptoms of any illness. Treatment of ears was discontinued and he passed into the care of his family physician. When seen a month later there had been a loss of 10 lbs. of flesh and there was not the same appearance of good health.

On March 20 a part of the lost flesh had been regained. The hearing tests showed little change from the first one.

The loss of lower tones and the appearance of the membranæ tympani certainly indicates middle-ear deafness, to which I believe a nerve lesion to have been added.

Lack of vestibular symptoms point to involvement of the trunk of the nerve.

Probably it will be willingly agreed that the acetonurea of diabetes, in common with the toxemia of syphilis, influenza, malaria, etc., could easily produce a neuritis of the eighth nerve as of others which are rather frequently involved. The only lesson of importance the writer sees in this, perhaps rare case, is the necessity of always bearing in mind that grave systemic diseases often have their first manifestations in the organs of special sense, and we should be alert to recognize them. Patients frequently consult the oculist or aurist without visiting their family physician, or if they do ask advice of their physician, they

present slight or no symptoms of a beginning systemic disease which attracts attention.

The only reports in literature I have found were references furnished me by Dr. Shambaugh, and are as follows: Hegher, Zeitschrift für Ohrenheilkunds, vol, lv, page 111. An acute neurolabrynthitis which was characterized by the marked labyrinthine symptoms, vertigo, tinnitus and deafness. The patient had ½ of 1% of sugar in urine, which was eliminated by diet and recovery, but not complete in high times, followed.

Witmach, Zeitschrift, vol. liii, page 19. Autopsy findings in case of ten-year-old girl who died in diabetic coma which showed degenerative neuritis and atrophy of eighth nerve.

Witmach also mentions diabetes as a cause of auto-intoxication neuritis, Zeitschrift, vol. xlvi, page 1.

## LATERAL DEVIATIONS OF THE EXTERNAL NOSE.

BY A. COOLIDGE, JR., M.D., BOSTON.

VIEWED from in front, the line of the nose in a typical face is straight and symmetrical. Frequently, however, as a result of trauma or irregular growth, the nasal dorsum deviates either as a whole or in part from the middle line. These lateral deviations of the external nose may be grouped into three main types.

In the first, the whole nose deviates to one side, the dorsum is straight, there is no angle laterally between the upper bony and lower cartilaginous portions, but the tip is on one side of the median line. This type is due, at least for the most part, to asymmetrical growth.

In the second type the bony upper half deviates to one side, while the cartilaginous lower half tends to return to the median line, causing a lateral angle in the dorsum. This deformity is the same as occurs with a fracture or dislocation of the nasal bones, and when not due to recent trauma is generally the result of an old unreduced dislocation.

In the third type the nasal bones are in the middle line, while the cartilaginous portion is bent to one side. This may be developmental or it may be the result of old trauma of the quadrangular cartilage of the septum from a blow on the tip of the nose modified by subsequent cicatrization.

Two or more of these types of variation may be combined.

When the external nose deviates, there is necessarily also more or less deviation of the nasal septum. In traumatic cases the septum is bent as a result of the external violence. When the asymmetry is due to irregular growth, the deviation of the septum may be the primary cause of the external deviation. With the forward growth of the septum in adolescence it frequently becomes deviated or bent, and the external nose, bony as well as cartilaginous, follows the lead of the septum and adapts itself to the asymmetrical cavities within. This applies not only to the nasal bones, but also to the nasal processes of the superior maxilla, which, as they are joined to the whole lateral edge of the nasal bones, are practically one piece with them.

As a disfigurement, a lateral angle between the bone and the cartilage is of more importance than a deviation of the nose as a whole from the median line. For this reason, there is seldom any reason for correcting a deviation of the first type. Often a considerable degree of lateral displacement is not noticed if the line of the dorsum is straight.

In the second type, where the nasal bones deviate, and the lower half of the nose returns towards the median line, the problem is somewhat similar to the reduction of a recent dislocation, except that the bones must be broken or cut. The distance from the dorsum of the nose to the level of the cheek, that is, the combined breadth of the nasal bones and nasal process, is the same on the two sides if the nose is in the middle line, but different if it deviates to one side. In other words, in order to replace the dorsum into the middle line it is necessary to make the distance equal on the two sides. If the narrower side cannot be broadened this must be done by narrowing the broader one, by sliding the edge of one nasal bone under the nasal process. This necessarily somewhat lowers the dorsum, or, in other words, reduces the profile. It may therefore be said that if there is height to spare, the operation is a simple one. It may be done as follows: An incision one-eighth of an inch in length is made along the middle of the junction of the nasal bone and the nasal process on each side. Through this a chisel separates the nasal bones from the nasal processes as high as the neck of the nasal bones. Taking advantage of the mobility of the skin, the chisel is turned at a right angle, and cuts through the neck of the nasal bones. The nasal bones from the neck downwards are then freely movable. Then upon the broad side, the periosteum of the upper edge of the nasal bone and the lower edge of the nasal process is elevated, making a pocket into which the nasal bone is pressed, and held in position by a strap depressing the dorsum. The incisions are closed without sutures, they heal by first intention and leave no appreciable scar. Enough of the septum must be resected either before or at the time of operation to correspond to the reduced height of the dorsum.

A nose which is too high and prominent, but straight, may be reduced in height by the same operation, except that the nasal bones on both sides instead of only one are pushed under the nasal processes. The bones are generally so thin that no line along their point of separation shows through the skin.

For the third type of lateral deviation, when the bones are in the middle line but the cartilage is bent to one side, a resection of the cartilage must be done. As little cartilage as possible should be removed, to save the tip of the nose from sinking. Each case presents its own problems, which are often difficult, and the results may be endangered by unexpected cicatricial contractions.

## PLASTER CASTING FROM LIFE TO SHOW EXTERNAL DEFORMITIES OF THE NOSE BEFORE AND AFTER CORRECTION.

BY ISABELLE D. KERR, M.D.

Of the different methods for making plaster casts from life, there are three of value to us. These are the partial face, the complete face and the partial head cast, all of which have their special merits.

For the cast of a child or of a very nervous person where it would be difficult to get them to breath through respirators, the partial face cast is the only one obtainable. Also to make a cast just previous to operation where time is limited, this cast takes the least time, and gives one valuable help. The full face cast is the more ideal, however, as it shows a deformity of the nose in its proper relation and a deviation of the nose at its proper angle to the rest of the face. If care is not taken in trimming a partial face, or in the manner of holding the cast, it may be possible that the degree of deviation is not shown at all. Particularly is this true if the nose is straight, but deviating as a whole to one side. The partial head cast would be the ideal one for all purposes except for the time which it takes to complete it. This makes it less practical than the full face cast. With the partial head, one has the advantage of using the ears as landmarks, thus accurately seeing the degree of deviation. This would be the cast to make to show any asymmetry of the head.

The method for making these casts is as follows: The patient is placed in the recumbent position. The clothing protected with a sheet. The face is prepared by smearing it well with a thick oil. The eyebrows, eyelashes and hair near the forehead are well soaked with oil to keep the plaster from adhering when set. To keep the plaster from getting into the eyes, I have been covering the lids with cargyle membrane in some cases. In others I have used nothing but the oil because I found that with the cargyle I did not get a very sharp impression. Patients should be instructed not to open the eyes until all the plaster has been removed from the lashes after the mask has been removed. A few minutes for practice in breathing through the respirators before the plaster is put on does away with the patient's fear that he is going to be smothered.

For respirators, I use pieces of small rubber tubing about five or six inches long. These are inserted about one and one-half inches into each nostril, taking care that the tubing is placed along the floor of the nose in order that the alæ shall not be pressed out and cause a wrong impression of the nose. Before inserting the respirators, it is well to cocainize the nose to do away with the discomfort and irritation, and the desire to sneeze, caused by the respirators. Cocaine also renders the breathing comfortable. In these cases of external deformity where there is usually a corresponding internal deformity with difficulty in breathing through one or both sides of the nose, it would be impossible to get enough air through the respirators without first shrinking the tissues. When a respirator cannot be inserted into a nostril on account of deformity, it has to be placed in the mouth.

Absorbent cotton is placed in the ears and around the respirators to keep the plaster from running in. To keep the plaster from running on to the back of the head, a board shield is held by an assistant on either side of the head, about an inch in front of the ear for a partial or complete face, and just back of the ears for a partial head. For the partial face the sheet is drawn up over the mouth and held on the sides by the shields. This prevents plaster from getting into the mouth and allows the patient to breath through the mouth under the sheet.

The plaster is mixed to a thin consistency somewhat thicker than cream. The impression of the face is begun by first pouring a spoonful of this thin mixture about the nose. Plaster sets very rapidly and gives an accurate impression of the nose if put on thin enough so that it will run easily around the angles of the nose and between the respirators.

The next step is to put a thin layer over the ears if making a partial head, or on the sides of the face if otherwise, then the chin and lastly the eyes because by this time the plaster has thickened and is less liable to get into the eyes. Then a second layer of plaster is put on to give the mask strength enough so that it will not break when removed.

Also the first coat around the nose has set sufficiently by the time you are ready to put on the second layer to bear the weight of the second coat so that the tip of the nose will not be depressed from pressure and give a false mask. The mask is left on until the plaster is sufficiently hard to remove, which is done by slight rocking until free, then lifting off. The respirators come out with the mask. Any defect in the mask caused by the joining on of plaster while building it, is filled in with plaster. The mask is then washed in water, smeared with liquid soap, then paraffine and kerosene, in order to keep the face plaster from adhering. The plaster used for making the face should be a hard plaster so that it will not break easily, while that used for the mask should be soft so that it can be more easily chiseled away. The face plaster is mixed to the same consistency as for the mask, poured into the mask, smoothed off, and, when set, turned over, and the mask chiseled away. Any defect in the face is touched up. The face is then given a coat of white shellac, the purpose of which is to preserve the model. After the plaster has thoroughly dried out it is so easily soiled and scratched from handling or dusting that the features can be easily destroyed. Finally, the cast may be tinted.

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The Italian *Policlinico* states that there is an endowment at Nice for bestowing small prizes annually on persons who have distinguished themselves particularly in "works of kindness and charity." Among the recipients at the recent distribution of the prizes last month was Count G. Naldi, dean of the physicians at Nice, aged ninety-one years.—*Jour. Am. Med. Asso.*

# Medical Progress.

## REPORT ON PEDIATRICS.

### PHYSIOLOGY AND PATHOLOGY OF THE DIGESTION OF THE CARBOHYDRATES IN INFANCY.

BY JOHN LOVETT MORSE, A.M., M.D.,
AND
FRITZ B. TALBOT, M.D.

### PHYSIOLOGY. FERMENTS.

Zwiefel, 1874,[1] and Korowin, 1875,[2] were unable to find a diastatic ferment in the pancreas of newly born babies, and to this fact is due most of the misconceptions concerning the power of digesting starch in infancy. The work which corrected this impression will be quoted later.

*Saliva.* — Zwiefel [1] found diastase in the parotid gland of the newly born but was unable to find it in the submaxillary. Ibrahim,[3] after a prolonged piece of work, found it in both the parotid and submaxillary glands, its action being stronger in the former than in the latter. Diastase was found much earlier in fetal life in the parotid than in the submaxillary, traces being found in the former at the fourth and in the latter at the sixth month of fetal life. The diastase of the parotid is the earliest digestive ferment found in the embryo.

A diastatic ferment can always be found in the saliva of healthy infants.[4] The diastatic action of saliva may continue in the stomach as long as two hours after feeding.[5]

*Stomach.* — Ibrahim [3] is the only worker who has examined the gastric mucous membrane of the newly born for the carbohydrate splitting ferments, and he has been unable to find either lactase, maltase or invertin.

*Pancreas.* — Moro [6] was able to demonstrate the presence of an amylolytic ferment in the pancreas of newly born babies when the pancreas was thoroughly extracted, and thus disproved the earlier work of Zwiefel and Korowin. Ibrahim [3] never failed to get the ferment in a six months' fetus when he tested the action of the ferment on starch meal. He was, however, unable to find it when he tested soluble (i. e., cooked) starch.

Ibrahim was unable to demonstrate invertin and lactase in the pancreas of newly born or older babies, but he was usually able to demonstrate maltase in the newly born and always in older children. Maltase may also be found in the blood.

*Small intestine.* — The mucous membrane of the small intestine contains amylolytic ferments.

Lactase, the ferment which splits milk sugar, has been repeatedly found in the mucous membrane of the small intestine.[7] Ibrahim always found it in the small intestine and meconium of newly born babies, but was unable to find it in premature infants. He says, however, that his method of determining lactase is not capable of demonstrating small amounts. Lactase is more abundant in the young animal than in the adult.

Pautz and Vogel found maltase, the ferment which splits malt sugar, in the small intestine of infants.

Invertin, the ferment which splits cane sugar, was found in the secretions of the small intestine of the newly born by Miura,[8] and Ibrahim was always able to demonstrate its presence both in the intestinal mucous membrane and in the intestinal contents of all fetuses.

*Large intestine.* — It is difficult to wash the large intestine free from meconium, and the results of the examinations of its mucous membrane are variable, as the tables of Miura, Pautz and Vogel show. It is, therefore, impossible to say whether it contains ferments or not.

*Stools.* — Pottevin [9] found an amylolytic ferment in the meconium. Kerley, Mason and Craig [10] were able to demonstrate the presence of a strong amylolytic ferment in the stools of very young babies, the possibility of the bacterial fermentation of starch being excluded. There is a larger amount of diastase in the stools of breast-fed babies than in those of the bottle-fed, which Hecht [11] believes to be due to the fact that the intestinal contents of the breast-fed baby pass more quickly through the intestinal canal than do those of the bottle-fed baby.

The power of digesting starch, while occasionally absent, is, therefore, almost always present both in the fetus and in the newly born.[3,7,12] Hedenius' experiments show that it is less powerful in young babies than in later life. Young babies are, nevertheless, able to adapt themselves to a food rich in carbohydrates. There is, according to Moro,[14] a rapid increase in the power of digesting starch during the first week of life. The baby, therefore, has a power of digesting starch at birth which gradually increases in strength as the baby grows older. According to Finizio,[15] it is twice as strong at eight months as it is at birth, while at twelve months it is almost as strong as at three years.

The question whether the carbohydrate-splitting ferments are affected by disease has been answered only in part. Orban [16] found by animal experimentation that an injured intestinal mucous membrane contained no lactase, and that the stools of babies ill with enteritis contained no lactase. Langstein and Steinitz,[17] on the other hand, always found lactase in the stools of babies ill with enteritis, whether mild or severe, acute or chronic.

### FORMS OF CARBOHYDRATES.

The carbohydrates used in infant feeding may be divided into the groups [18] as shown on the following page.

There are various preparations of the starches, such as Mellin's Food, Malted Milk and Liebig's soup, which are more or less dextrinized.

Lactose, or milk sugar, finds its origin only in animals. The researches of Deniges [19] and Bonamartini [20] established the fact that the lactose in the milk of the woman, cow, ass, rabbit, dog and horse is essentially the same. Its quantity varies the least of all the elements of human milk.

### DIGESTION OF CARBOHYDRATES.

The carbohydrates are broken down during digestion into the simplest forms of sugar, the

| Milk sugar group. | Cane sugar group. | Malt sugar group. | |
|---|---|---|---|
| | | Starch (Amylum) | |
| | | ↓ | |
| | | Dextrin (Amylo-dextrin) | Poly-saccharide |
| | | ↓ | |
| | | Erythro -& Achro-dextrin | |
| | | ↑ | |
| Lactose (Milk sugar) | Saccharose (Cane sugar) | Maltose (Malt sugar) | Di-saccharide |
| ↕ | ↕ | ↕ | |
| Dextrose + Galactose | Dextrose + levulose | Dextrose + Dextrose | Mono-saccharide |

mono-saccharides, by the various ferments described above. According to Rohrmann [22] a considerable amount of the disaccharides may pass into the intestinal mucous membrane and there be split into mono-saccharides. The mono-saccharides are carried by the portal vein to the liver, where they are transformed into glycogen, the only difference being that dextrose is more easily converted than levulose or galactose.* The pancreas has some influence on this process, because extirpation of the pancreas in dogs results in sugar in the urine and interferes with the formation of glycogen in the liver. The liver actually has the property of forming glycogen from sugar.†

The purpose of the splitting of the poly- and di-saccharides into mono-saccharides is to prepare them for use inside the body, because the unsplit carbohydrates are not burned up in the body, but are excreted in the urine. The transformation of sugar into glycogen, which is deposited in the liver and muscles, is of great importance, because this glycogen can be broken down again into sugar according to the needs of the body. The mono-saccharides are absorbed more quickly than the disaccharides.[23]

A large part of the digestion and absorption of the carbohydrates takes place in the upper part of the small intestine,[24] but splitting and absorption may also take place in the large intestine.[25]

There is normally about 1-10% of dextrose in the blood. The slightest disturbance of the regulating apparatus will cause a hyperglycemia which results in glycosuria. A deficit of sugar in the blood is made up from the glycogen deposts.[21]

Albertoni [26] and Hédon [27] found that sugars have a purgative action when they are given in large enough amounts. This action is more marked when they are taken in concentrated solution. All sugars have this action, the difference between them being only in degree. They found that glucose and cane sugar are much more quickly absorbed than lactose, and that the former has less of a purgative action than the latter.

Little or no sugar can be found in the stools under normal conditions, but when the food passes rapidly through the intestinal canal, as it does when peristalsis is rapid as the result of disease or indigestion, sugar can be found in the stool (Hecht). Usually only the products of the decomposition of sugar can be isolated.

Hedenius [28] fed babies with milk mixed with wheat flour, oat gruel or Keller's malt extract and measured the amount of carbohydrate ingested, the amount in the stools, and their acidity. He found that when simple cereals were used, less carbohydrate was found in the stools than with complicated mixtures and that the more carbohydrate in the stool, the greater its acidity. He never found more than 3% of the ingested carbohydrate in the stool in any instance. Keller [4] has shown that carbohydrates make the digestion of protein more complete.

### METABOLISM OF CARBOHYDRATES.

Numerous observations [29] have shown that when milk sugar is injected directly into the circulation it may be completely recovered in the urine. Grosz [30] was never able to detect milk sugar in the urine of healthy babies, but found it in the urine of those suffering with gastro-intestinal disease, in which there was presumably an absence of lactase in the intestine. Langstein and Steinitz [31] repeated Grosz's experiments and in certain instances found lactase in the stools at the same time that sugar was being excreted in the urine. This sugar was, moreover, not always lactose, but sometimes galactose, one of the products of the splitting of lactose. They tried to explain this as follows: That some of the sugar passes through functional or anatomical lesions of the intestinal wall before it is completely broken up and is excreted in the urine as an intermediary product of metabolism.

Mendel and Kelimer [32] have shown that when cane sugar is introduced subcutaneously into dogs or cats in doses of one to two grams per kilogram of body weight it is not completely recovered in the urine. The quantity excreted amounts as a rule to more than 65% of that introduced. The excretion begins within a few minutes and is usually completed within thirty-six hours. Fisher and Moore [33] draw attention to the possibility that the sugar thus introduced may be excreted through the walls of the alimentary tract and there be digested. These views are supported by Japelli and D'Errico,[34] who conclude from their experiments on dogs that when cane sugar is introduced directly into the

* Abderhalden: Textbook of Physiological Chemistry, London, 1908.
† Grube: Pflüger's Arch. cvii, 1905, p. 490.

circulation the quantity eliminated in the urine is never equivalent to the amount injected. This causes both glycosuria and saccharosuria, the former disappearing first. The blood has no power of converting cane sugar. According to these writers, cane sugar introduced intravenously is eliminated into the alimentary tract through the gastric mucosa, the salivary glands and, to an insignificant degree, through the bile. The subsequent fate of this component is obvious.

According to Finkelstein [35] sugars may cause fever. This so-called sugar fever has been studied especially by his pupils. Leopold [36] found that 43% of the babies tested with lactose, 47% of those with glucose, 42% of those with saccharose (cane sugar), and 33% of those with maltose reacted with fever. This fever was always accompanied by diarrhea, and in none of the cases tested in which the stools remained normal did the sugar cause fever.

The limits of assimilation of the different sugars varies and are as follows:

Grape sugar: In babies, about 5 grams per kilogram (Langstein and Meyer).

Grape sugar: In one-month baby, 8.6 grams per kilogram (Greenfield [37]).

Galactose: No accurate data.

Levulose: (Lower for babies than adults.) One gram per kilogram (Keller).

Maltose: Over 7.7 grams per kilogram (Reuss).

Lactose: 3.1–3.6 grams per kilogram (Grosz).

Cane sugar: Probably about the same as lactose (Reuss).

Escherich [38] divides the digestive disturbances of infancy into two main types: (*a*) Fermentation with the formation of acid products and (*b*) putrefaction with the formation of alkalies. These two processes are antagonistic to one another, the basis of fermentation being carbohydrates and of putrefaction protein. An excessive preponderance of one over the other may do harm. Fermentation results in an excessive formation of acids, especially of lactic acid from lactose. This may cause a large number of stools as the result of the increased peristalsis and the flow of serous fluid or cellular exudate. Razenski [39] has shown that in babies sick with what he calls "dyspepsia intestinalis acida lactorum" there is an increased acidity of the intestinal contents and that the utilization of fat is diminished. Meyer and Leopold [40] intimate that a sugar indigestion may cause the appearance of casein curds.

Finkelstein and Meyer [41] believe that milk sugar is the primary cause of the fementative dyspepsias of infancy and that when there is a disturbance of the utilization of fat in these conditions it is a secondary manifestation. They claim that these dyspepsias can be relieved by the long-continued diminution of the carbohydrates in the food and quickly cured by the withdrawal of milk-sugar and the administration of large amounts of casein (*Eiweissmilch*). In general, the fermentation of the sugar depends upon the relation between the casein and the sugar in the food. They advise the administration of other easily assimilable and consequently little fermentable carbohydrates, such as maltose, in place of lactose, after the disappearance of the acute symptoms. Birk [42] and Reuss and Sperk [43] have confirmed their observations. Braumüller [44] calls attention, however, to the danger of the sudden addition of sugar to the diet after it has been withdrawn and large amounts of casein given, believing that under these conditions the ability to form the ferments necessary to take care of sugar is practically abolished.

Kendall [45] has shown that the colon bacillus, like the diphtheria and tetanus bacilli, causes fermentation or putrefaction according to whether it is in a carbohydrate or protein medium, that it attacks the sugar in preference to the protein of the medium and that until the carbohydrate is used up the protein is shielded from attack. The products of the fermentation of carbohydrates are acid. He also showed that the Shiga bacillus produces toxin only when the medium has an alkaline reaction. He, therefore, proposed feeding babies ill with bacillary dysentery with an easily fermentable carbohydrate in order to change the character of the bacterial activity in the alimentary canal from the proteolytic to the fermentative type. The result is to stop further formation of toxin. This was done by feeding the babies a 5% lactose solution, under the influence of which the dysentery bacillus and streptococci tend to disappear.

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## Reports of Societies.

### NEW ENGLAND OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

Meeting, March 28, 1911, Dr. Geo. A. Leland in the chair.

Dr. Edgar M. Holmes read a paper on

A CASE OF VERTIGO CURED BY TREATMENT OF THE EUSTACHIAN TUBE.[1]

DISCUSSION.

Dr. F. P. Emerson: I have been very much interested in what Dr. Holmes reported and I think the direct treatment of the Eustachian tube marks a step forward in the evolution of the treatment of aural disease, and after we have stopped the infection that we all have been treating in the anterior nares, by relieving minor foci, in which there is a discharge of pus directly into the tube, producing some of the conditions which Dr. Holmes has described, the further advance in the treatment of these cases is certainly helped out very much along the line which Dr. Holmes had advocated for it.

I have been very much surprised, in following up a series of cases which had become old chronic office cases, over a long time, in which the symptoms of tinnitus has been markedly relieved by the local application; first using a weak solution of cocaine and adrenaline, and directly following out the lines which Dr. Holmes has followed in this case, and it is surprising how few treatments will relieve the feeling of fullness and dullness in the ears; and the patient will remark that the head feels better, and then the tinnitus is modified. Many cases of tinnitus, which we have thought were located higher up, in the labyrinth or in the middle ear, certainly in my experience have been very markedly relieved by the local treatment, and I think the essential feature in that treatment, in these cases, is the cotton tipped applicator.

Dr. Holmes: There is not much to say. I simply spoke of this one case. I have treated, during the past two months, over two hundred cases. We have kept careful records of them and we have been able to keep tabs on each other by having, most of the time, two and sometimes three on the service, and we have tried not to hypnotize the patients. As Dr. Emerson has said, it is very surprising the relief obtained in these cases, as he said, old cases where they have been catheritized here and there for months, or years, some of them, and they would not come in and say they were very much relieved through any mental thing, I do not believe. We can see in these cases that the inflammation in the tubes is relieved in the same way we can see that we relieve the pharynx by local applications. Of course some of these cases are not relieved; in the middle ear adhesions have taken place which we cannot relieve by any treatment. In regard to these cases, there have been over twenty acute bulging middle ears where we ordinarily would have had to perform paracentesis, and out of those cases all but two, up to date, have been relieved without performing paracentesis; but that will come out in a paper at Atlantic City so I will not go into the details here.

Dr. W. H. Merrill read a paper entitled

A CASE OF NERVE DEAFNESS DUE TO THE TOXEMIA OF DIABETES.[2]

DISCUSSION.

Dr. A. M. Amadon: I am very glad that Dr. Merrill has reported this case, even though he has done it so modestly. It is a case that has interested me though it has embarrassed me to have shot so wide of the mark at the time he kindly allowed me to examine it.

In looking over my notes upon the case I find that the patient said his father was deaf in his old age and that two brothers are deaf. He heard better before getting up in the morning, but the hearing decreased after he was up and about. My hearing test showed some decrease in bone conduction and the upper limits were slightly below normal, but these items were not of great enough moment to convince me that it was a case of labyrinthine deafness. There was moisture in the tube, and by digital examination I found some fibrous bands in Rosenmüller's fossæ which I broke up with my finger. Though the diagnosis was not clear upon the day when I saw the case, I was inclined to consider it a middle ear affection rather than labyrinthine.

In an examination of the literature with Dr. Merrill there was one case of diabetes reported by Dr. Hegener of which the clinical history was given very completely. In that case the amount of sugar was much less than in Dr. Merrill's case. There was a peculiar loss of hearing for sibilants. Some nausea and dizziness were present. The hearing test showed an increasing loss of hearing for the forks as the ascent into the higher tones was made, and the upper limits were reduced. The clinical picture presented by that case strongly suggests the chronic labyrinthine deafness as it is described by Drs. Wittemaak and Manasse, involving degeneration of the nerve fibers primarily and of the structures in the ductus cochlearis secondarily. It is interesting to know that this case recovered hearing with the recovery from the diabetes, but the upper limits of hearing never returned quite to their normal.

There is in Pollitzer's textbook a reference to an early pathological report of a case of diabetes by Steinbrügge in which there were the remains of a slight hemorrhage into the cochlea.

It seems very likely that the pathological condition causing the deafness in these cases is that of the progressive labyrinthine deafness. The absence of dizziness in Dr. Merrill's case would mean that only the cochlear branch of the eighth nerve was affected, while in the case of Dr. Hegener both cochlear and vestibular branches were involved.

## Book Reviews.

*A Textbook of Surgical Anatomy.* By William Francis Campbell, M.D., Brooklyn, N. Y., Professor of Anatomy, Long Island College Hospital; Attending Surgeon to the Methodist Episcopal, Swedish and Bushwick Hospitals; Consulting Surgeon to the Jamaica Hospital. Second edition, revised. With 319 original illustrations. Philadelphia and London: W. B. Saunders Company. 1911.

[1] See Journal, p. 848.

[2] See Journal, p. 849.

This second edition of Campbell's book shows the need and value of the publication and the popularity in which it is held by the profession. We find little to add to our favorable review of the first edition. The work is an accurate, carefully written and important textbook. It should be in every student's library, and will be found a practical and useful book of reference for medical and surgical writers.

*Moto-Sensory Development.* Observations on the First Three Years of a Child. By GEORGE V. N. DEARBORN. Baltimore: Warwick & York, Inc. 1910.

This series of physiologic and psychologic observations on the development of an infant illustrates how easily importance may be attached to what is unimportant and interpretation read into much that is meaningless. The observations are carefully made and minutely recorded, but the love which they indicate seems their chief merit, and the inductions drawn from them do not appear of startling or original value. The entire work, as an "educational psychology monograph," reminds one of the researches of the Laputian academicians.

*Prevention of Infectious Diseases.* By ALVAH H. H. DOTY, M.D. New York and London: D. Appleton & Co. 1911.

This book, representing the results of the author's experience as health officer of the port of New York, deals with the problems of international quarantine prevention of the more serious transmissible diseases, — smallpox, yellow fever, typhus fever, Asiatic cholera and bubonic plague. There are special chapters on classification of the infections, on marine sanitation, on disinfection and disinfectants, on the thermometer, and on the mosquito. The duty of guarding a nation's ports is like that of the individual in guarding the avenues for the entrance of infection into his own body, and can be much more successfully accomplished. One of the great triumphs of modern medicine is to have shown how to prevent the transference of sweeping pestilences from one country to another. Dr. Doty's volume summarizes our present knowledge and methods of this prevention by port sanitation, inspection and quarantine.

*A Manual of Hygiene and Sanitation.* By SENECA EGBERT, A.M., M.D., Professor of Hygiene and Dean of the Medico-Chirurgical College of Philadelphia; Member of the Academy of Natural Sciences of Philadelphia; Member of the American Medical Association, etc., etc. Fifth edition. Illustrated. Pp. 508. Philadelphia and New York: Lea & Febiger. 1910.

In the revision of this well-known, authoritative "Manual of Hygiene and Sanitation" the author not only discusses the fundamental laws of hygiene, but makes clear the advantages which result from action in accordance with such laws. Especially commendable are his efforts to awaken physicians to their need of acquiring a knowledge of hygiene, preventive medicine and sanitary science. We welcome the book as a trustworthy manual of essentials in convenient size, and recommend its use by physicians and by all students of public health and preventive medicine.

*Manual of Diseases of Women.* By W. E. FOTHERGILL, M.A., B.Sc., M.D., Assistant Gynecological Surgeon, Royal Infirmary, and the St. Mary's Hospitals, Manchester; Clinical Lecturer on Obstetrics and Gynecology in the Victoria University of Manchester. With 144 illustrations in the text. New York: William Wood & Co. 1910.

This is an excellent small book of four hundred and thirty-three pages written in a readable colloquial style which brings into prominence the important features of the pathology, symptomatology, diagnosis and treatment of pelvic diseases.

The illustrations, most of them original, are satisfactory from the standpoint of making plainer the text rather than being crowded in in great profusion because the author or the publishers wished to make a display, as happens so frequently in the textbooks of the present day.

The paper and the press work are good. The book is light in weight and of such size that it will slip into a large coat pocket.

Aside from a few essential points of technic such as, "the examination is most satisfactorily made if the patient is in bed," with which it is hard to agree, the book can be recommended heartily to the practitioner of medicine.

*The History of Medicine, Philosophical and Critical, from its Origin to the Twentieth Century.* By DAVID ALLYN GORTON, M.D. In two volumes. New York: G. P. Putnam's Sons. 1910.

The author in these two volumes, together comprising somewhat less than a thousand pages of text, has undertaken a large task in discussing the history of medicine from the earliest years to the twentieth century. The result has been very naturally a cursory description of many important periods, but this necessary superficiality is more than compensated by the readability of the text and the comprehensive survey which brevity permits of the entire history of medicine up to very recent times. The author has discussed theories and ventured opinions which add rather than detract from the merit of the book as a whole. The apologetic attitude assumed in the preface is certainly unnecessary, although few will agree with certain of the radical opinions expressed. The volumes are admirably printed, sufficiently illustrated, largely by more or less familiar cuts of the distinguished men of various periods. A very complete index adds materially to the value of the book, which we are glad to recommend to the attention of students of medical history and others interested in the somewhat erratic development of a great profession.

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## SIR JAMES YOUNG SIMPSON.

On June 7, 1811, was born James Young Simpson, destined later to be the first demonstrator of surgical anesthesia by means of chloroform and to become one of the eminent figures in the history of medical science. The centennial anniversary of his birth is an appropriate occasion for reviewing some of the details of his life and of the work which he accomplished.

James Young Simpson was born, a seventh son, in the little village of Bathgate, Linlithgowshire, Scotland, of poor but thrifty parents. He was early selected as the member of the family to receive an education, and after ten years of common schooling entered Edinburgh University at the age of fourteen. Here he speedily justified the confidence that had been placed in his promise: he worked hard, slept little, and took high rank in all his studies. He had a catholic and devouring taste for knowledge, but was particularly devoted to inquiry in the physical sciences. It was natural that he should determine on medicine as his profession, and in 1835 he was established in its practice at Edinburgh. Already he had accomplished valuable work in microscopic pathology, but his instincts were temperamentally clinical, and it was in obstetrics that he found the most congenial field for the exercise of his peculiar talent. In 1836 he published his first and still famous monograph on "Diseases of the Placenta." So rapidly did his reputation increase as a practitioner and teacher that on the death of Hamilton, in 1840, he was appointed the latter's successor as professor of midwifery at the University of Edinburgh, — at the age of twenty-nine! In this office and in his practice he continued with the same active and unremitting energy. He made many contributions to the progress of his speciality, among them the invention of the cranioclast, and found time as well for investigations in other branches of medicine, and in archeology, his avocation. He was honored with an appointment as physician to the Queen, and at the age of thirty-five had reached a position of national reputation.

It was at this juncture, in 1846, that the report came from Boston of Morton's demonstration of surgical anesthesia by sulphuric ether. Simpson was one of the earliest in Great Britain to appreciate the full meaning of this great discovery, and was the first to employ ether in obstetrics, using it successfully in a case in which he performed version for contracted pelvis. The new agent, however, was disagreeable and irritating, and he immediately set about the search for other anesthetic substances of equal efficacy and without these disadvantages. Like Morton and Hunter and other great scientific zealots, he experimented upon himself, inhaling various volatile fluids, such as acetone and benzine, and noting their effects. His method was as empiric and rational as that of Ehrlich in the discovery of salvarsan. Finally, on Nov. 4, 1847, he essayed chloroform. At first he "became bright-eyed, very happy, and very loquacious." Then he heard sounds "like those of a cotton-mill, louder and louder; a moment more, then all was quiet, and then a crash!" He woke to find himself on the floor, whence he had fallen from his chair. With him were his assistants, Dr. Duncan and Dr. Keith, who also had partaken of the "potent poison." They and others in the household repeated the experiment many times that night, sitting up till three the next morning.

On Nov. 10, 1847, Simpson formally communicated to the Medico-Chirurgical Society his discovery of the anesthetic properties of chloroform. A few days later he first employed it successfully in a case of labor; and from that time its use became general throughout Great Britain. His fame was now international, yet his professional zeal was not in the least abated thereby, but continued undiminished to the end. In obstetrics he was particularly urgent in his advocacy of the value of version as a means of avoiding craniotomy. In the newer field of gynecology he was a pioneer, and his many papers and lectures on that subject remain classics to this day. Particularly does he deserve credit for the clearness with which he saw and the insistence with which he taught that obstetrics and gynecology inseparably constitute a single

department of medicine. He of course knew nothing of bacteriology and asepsis, and to him therefore the great later domain of major surgery was closed, though he was one of the early ovariotomists. He was of those whose labors and observations paved the way for the brilliant progress of surgery during the past forty years.

In 1886 Simpson was created a baronet, and on May 6, 1870, he died full of honors and keen with energy to the last. The centennial of his birth has been the occasion of many observances in Great Britain. He is well remembered in his native land. At Edinburgh his monument stands in Prince's Street with those of Scotland's greatest sons. The current issue of the *Edinburgh Medical Journal*, published as a *Festschrift* in his memory, is devoted to numerous interesting articles descriptive of his life and work. He will always be most famous for his demonstration of chloroform, which, despite its now appreciated risks, remains one of the standard and beneficent anesthetic agents of medicine. He deserves credit and reputation none the less, however, for his contributions to the teaching and practice of obstetrics and gynecology, and for his early efforts to demonstrate their unity. His personal character, his professional zeal, the brilliancy of his scientific attainments all merit the highest admiration. His name will remain one of the greatest that Scotland has given to the history of medical and of human progress.

## SOME POSSIBLY FRUITLESS MODES OF SOCIAL ENDEAVOR.

IN last week's issue of the JOURNAL we gave some preliminary notice of the National Conference of Charities and Correction, then in session in Boston. The meetings of the various sections of this convention have continued through the week, the entire gamut of sociologic problems has been discussed, from juvenile delinquents to recreant husbands, with "great argument about it and about." And now that the conference is at an end, the question arises of its actual accomplishment. Doubtless the discussion of vexing problems is profitable, even if no dicision be reached. Doubtless, too, a vast amount of good is accomplished by such organized charities throughout the land. There always remains the query, however, whether some of the activities of the charitable and social-service worker may not at times be supererogatory and meddlesome.

In the issue of *Science* for June 2 is an article by Professor Edwin O. Jordan, on "Profitable and Fruitless Lines of Endeavor in Public Health Work." It is characteristic of human frailty, having hit upon an advantageous mode of activity, immediately to overdo the same with a great consciousness of rectitude. A deal of energy is developed, like that of a squirrel turning round in a revolving cage, but there is no tangible or profitable result. Excess of zeal in action is mistaken for actual accomplishment. So, Professor Jordan points out, "a part of the energy of almost every municipal health department is devoted to combating imaginary dangers, or applied to tasks that have only a remote bearing on the public health." This is strong language to which we are not inclined to give unqualified assent, but it suggests at least a definite point of view. Garbage disposal and plumbing inspection are examples of activities in which much energy is wasted since, "Sanitarians do not admit that even a grossly improper method of garbage disposal can have much to do with the spread of disease in a sewered city."

Yet these activities often usurp much of the time and money of municipal health departments.

Similarly in the field of social service there are or may be fallacies pursued with zeal because their validity is accepted without criticism. For instance, to what end should the intemperate husband be driven from the saloon to the cocaine den, when it was the disappointment of the utterly selfish and useless wife that first sent him to the saloon? Or to what end should bath-tubs and recreation grounds be freely provided for those who use the former to store household miscellanies and who scatter all manner of scraps on the latter? The parable of casting pearls has not yet wholly lost its applicability, and it was spoken by one dedicated to the social service of mankind.

These comments are made purely in the line of suggestion, not at all in the spirit of unkindly criticism. They are merely intended to point out some of the possibilities of fruitless endeavor on the part of those whose laudable motives and precious energy might be profitably applied. It is as profitless as pouring water in a sieve to labor unduly in the effort to reclaim the unfit, when the conditions that make their unfitness are rooted in the fiber of their own composition. It is profitless to expend great toil in removing a few grains of sand, when it is the tides of an eternal sea that from day to day are shaping the shore. Natural process in the evolution of man

had begun when the first ameba failed to reach the morsel of food that was grasped by the pseudopodium of his more able brother, and it will continue to regulate man's destiny on earth without appreciable modification until the end.

## SANITARY CONDITIONS OF MASSACHUSETTS FOUNDRIES.

THE monthly bulletin of the Massachusetts State Board of Health for April contains an interesting paper by Dr. William C. Hanson, assistant to the secretary of the Board, on "Sanitary Conditions in Foundries in Massachusetts." During the year 1910, 209 foundries were inspected in this State, of which 163 employed ten or more workers each, and 46 employed less than ten. In these foundries are carried on numerous different processes, the hygienic importance of which is that "they expose the workmen to extremes of temperature, to dust, and to more or less irritating gases and vapors."

One of the subjects particularly investigated was the occurrence of so-called "foundry chills," which apparently represent an acute intoxication from inhaling the fumes generated in smelting zinc and other ores.

"In foundries where brass or composition is cast, employees are exposed to fumes from the zinc which enters into the composition of these metals. The metals are usually melted in firepots which are most frequently below the floor. These are covered with iron covers so that during the melting few or no gases escape. In the foundries where the metal was melted the blast furnaces were found properly hooded to carry off the fumes. When the metal is ready for pouring the crucibles are lifted out by means of long iron holders and are carried by two men to the moulds where it is poured. It is during this process that the zinc volatilizes and is given off as dense gray fumes, which, on being cooled by the air of the room, precipitate into fine gray powdered flakes which fill the room, and are unavoidably inhaled by the workers. Brass casters, as well as men who cast composition containing a high per cent of zinc, frequently suffer from what is known as 'brass chills.' Those are more apt to suffer who are not used to this kind of work or who return to it after an intervening period during which such work was not done. The 'chills' are apt to occur on damp, cloudy days, when the fumes, generated during casting, are not readily carried out of the foundry. The 'chills' usually come on in the late afternoon or on reaching home in the evening The worker experiences an irritation of the throat, a metallic taste in the mouth, and pains all over his body, as if suffering from an attack of 'la grippe.' Shortly after the 'chills' set in they occur intermittently for a few hours and then terminate in a profuse sweat. Most often the worker feels well enough in the morning to return to work. Occasionally, however, a man may have to stay out of work for a day or two."

Besides these cases of acute zinc poisoning, other forms of metallic poisoning were observed, notably one case of chronic lead poisoning and one of chronic antimony poisoning.

The foundries were further inspected with a view to the means afforded to employees for protection from dust, for cleanliness, for light, and for ventilation. In general the conditions were found to be fairly good, but 106 orders were issued relative to various defects observed. The conclusion of the paper is that much education is still needed among both employers and employed, to make the former realize that good sanitary conditions are an asset because they increase the efficiency of the worker, and to teach the latter to recognize the dangers to which he is exposed and to utilize the facilities which are afforded for his protection.

## THE NEW MEDICAL BUILDING OF McGILL UNIVERSITY.

THE formal opening of the new medical building of McGill University was celebrated with appropriate ceremony at Montreal, on Monday, June 5. At three o'clock in the afternoon was held the annual convocation for conferring degrees in medicine and agriculture, at which were present many graduates of the university, and representatives from medical schools in other parts of Canada, in England, in Scotland, and in the United States. The honorary degree of LL.D. was conferred on several of the distinguished guests, among them Dr. Lewellys Franklin Barker, professor of medicine at Johns Hopkins University, Baltimore, Dr. William Thomas Councilman, professor of pathology at the Harvard Medical School, and Dr. John Collins Warren, F.R.C.S. (Eng.), of Boston.

At nine o'clock in the evening the new buiding was officially opened by his Excellency, Earl Grey, Governor-General of Canada and visitor of the University. This ceremony was followed by a concert and dance. The new building, which is the largest of the university group, is built of limestone and is of modern fireproof steel construction throughout. It contains well-equipped laboratories, a museum, and abundant provision for class rooms and lectures. In architectural appearance it is charmingly suggestive of some of the older university buildings in

England and Ireland. Its erection and equipment, at a cost of nearly $800,000, have been made possible largely by the munificent generosity of Lord Strathcona, a frequent former benefactor and patron of McGill University.

On Tuesday, June 6, was laid by Earl Grey, the cornerstone of the new building of the Montreal General Hospital, an institution whose history has been closely associated with that of the medical school. Following this ceremony was a garden party, and in the evening a dinner given by the dean, professors, and members of the teaching staff of the faculty of medicine of the McGill University. In connection with the celebration of these two days was held a reunion of the graduates in medicine of the university.

These events mark an important step in the progress of medical education not only in Canada, but upon this continent, for they signalize the endowment with adequate facilities for efficient work of another of the great medical schools of America.

## CENTENNIAL OF THE RHODE ISLAND MEDICAL SOCIETY.

THE one hundredth anniversary of the Rhode Island Medical Society was celebrated at a meeting held on June 1, at Providence, R. I. After presentation of the annual reports and election of officers for the ensuing year, Dr. G. Alder Blumer delivered the address of the occasion, entitled "A Plea for the Medical Library," describing the steps in the development of the library of the society and the efforts that have recently culminated in the raising of a sum sufficient to begin the erection of a new and separate building for its accommodation. This library of over thirty thousand volumes, one of the large and important collections of medical literature in this country, has hitherto been stored in the Rhode Island Public Library building. The provision of suitable quarters for the care and use of this medical library has been one of the earnest desires of the Rhode Island Medical Society, and the ceremony of laying the cornerstone of the new building appropriately marked the centennial anniversary of its organization.

The cornerstone was laid by Dr. Frank L. Day, who further described the stages in the growth of the library and the importance of such an institution, not only to medical education, but to the public welfare. Addresses were also made by the Governor of Rhode Island, by the Mayor of Providence, and by Dr. Frederick C. Shattuck, of Boston. At the annual dinner, which was attended by about two hundred and twenty-five physicians, there were addresses by Dr. Arthur Hollingsworth, the anniversary chairman, and by Dr. Hugh Cabot, of Boston.

A full account of the proceedings on this interesting occasion will be published in a later issue of the JOURNAL. The Rhode Island Medical Society is one of the older state medical organizations in this country, and the conclusion of its first century of honorable service in the community is a source of pleasure and satisfaction to members of the profession throughout the United States.

## TESTIMONIAL TO DR. OWEN COPP.

IN recognition of Dr. Owen Copp's long service to the Commonwealth as executive officer of its Board of Insanity, and in view of his forthcoming departure to accept the position of superintendent of the Pennsylvania Hospital for the Insane, a dinner was given him on June 9, at the Union Club in Boston. Some forty men were present to testify to their regard for the eminent services rendered by Dr. Copp to the cause of insanity in this state. Dr. Walter Channing presided, and with appropriate introductions, called upon a number of men closely associated with the work of psychiatry, who spoke feelingly with reference to Dr. Copp's share in the development of our system of caring for the insane. The speakers were Dr. Edward Cowles, Dr. William N. Bullard, Mr. William F. Whittemore, of the State Board of Insanity, Dr. Herbert B. Howard; Dr. George T. Tuttle; Dr. Walter E. Fernald, and Dr. G. Alder Blumer, of the Butler Hospital. All of these speakers in their varying ways and from their personal points of view showed wherein Dr. Copp had proved so useful a public servant, and so widely influential in developing a policy which may well stand as a model for the treatment of the insane in other states, as well as a means of further investigation in the difficult field of mental disease. Dr. Copp when called upon to speak, showed much appreciation of what had been said of him; but with becoming and characteristic modesty disclaimed the justice of so high a degree of praise. His remarks were also noteworthy in that he succinctly summarized his views regarding the relations of the governing boards of institutions, and clearly pointed out wherein the sources of inefficiency lay in the various methods of control. A fitting close to the dinner, which will be remembered by all those

present as a memorable testimonial to exceptional efficiency, was the presentation to Dr. Copp by Dr. Henry R. Stedman of a handsome loving cup bearing the following inscription: Presented to Dr. Owen Copp by a number of friends in recognition of his distinguished service to the insane of Massachusetts, June 9, 1911. The cup was accepted with grace and deep feeling.

## MEDICAL NOTES.

Yellow Fever at Kingston. — A press report from Kingston, Jamaica, states that a case of yellow fever was discovered in that port on June 6.

Case of Cholera at Berlin. — A press despatch from Berlin states that on June 5 a case of Asiatic cholera was reported in that city.

Baltimore College of Physicians and Surgeons. — The Tri-State Chapter of the graduates of the College of Physicians and Surgeons, of Baltimore, has been organized to include the graduates of that college residing in New York, New Jersey and Connecticut.

London Death-Rates in April. — Statistics recently published show that the death-rate in London for April, 1911, was 15.5 per 1,000 living. Among the several districts and boroughs, the highest rate was 20.8 in Shoreditch, at the east end, and the lowest 10.4 in Lewisham, a southern suburb.

Cholera Aboard the Saxonia. — It is reported in the daily press that on June 5 the steamship *Saxonia* was detained in quarantine at Trieste, Austria, on suspicion that a death which occurred in the steerage during the voyage from New York was due to Asiatic cholera. Bacteriologic examination is being made of the stools of several passengers who have had recent enteric disturbances and are suspected of being possible cholera carriers.

Vital Statistics of Montclair, N. J. — The recently published sixteenth annual report of the board of health of the town of Montclair, N. J. describes the operations of the Board during the calendar year 1910, and records the vital statistics for that period. The death-rate of the town in 1910 was 11.12 per 1,000 of population, the birth-rate 19.4 and the marriage-rate 7.3. Of the total number of deaths, 16.1% were recorded as due to tuberculosis, and 14.5 due to pneumonia. There was a marked increase during this year in the prevalence of certain communicable diseases, especially scarlet fever and diphtheria. On the whole, however, the hygienic and sanitary conditions of the town have been excellent, and it is to be noted that there was not a single death from typhoid fever during the year.

English and Welsh Vital Statistics for 1910. — Completed vital statistics of England and Wales for the year 1910, issued in London on June 10, indicate a slight increase in the number of marriages in these two countries and a decrease in both births and deaths. In 1910 there were 267,000 marriages, corresponding to a rate of 14.8 persons per 1,000 of the population of all ages. In 1909 this rate was only 14.6, but in 1899 it was 16.5, and in the decade from 1900 to 1909 it was 15.5. The number of deaths in 1910 was 483,000, a rate of 13.4 per 1,000, as against 14.5 per 1,000 in 1909, the lowest figure previously recorded.

"The proportion of deaths under one year of age to registered births was 106 per 1,000 in 1910, or 3 per 1,000 less than 1909, the lowest recorded up to that year. Compared with the decade 1900–1909, the rate of infantile mortality showed the remarkable decrease of 26 per 1,000 births. Births numbered 897,000, an average of 24.8 per 1,000 of the population at all ages. This was 0.8 per 1,000 below the rate in 1909, which was the lowest rate reached till then. Compared with the preceding ten years, the birth-rate showed a decline of 2.7 per 1,000.

With regard to London, the marriages in 1910 numbered 39,000, a rate of 16.0 per 1,000 of all ages, or an increase of 0.2 per 1,000 on the previous year. The London births numbered 114,900, a proportion of 23.6 per 1,000 of the total population — the lowest in the Metropolis since civil registration was established. Deaths in London were 61,700, a rate of 12.7 per 1,000 of the population. This was 1.3 below that of 1909, which was at that time the lowest on record."

### BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, June 6, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 85, scarlatina 26, typhoid fever 9, measles 156, smallpox 0, tuberculosis 76.

The death-rate of the reported deaths for the week ending June 6, 1911, was 15.97.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, June 10, 1911, was 178, against 206 the corresponding week of last year, showing a decrease of 28 deaths, and making the death-rate for the week,

13.47. Of this number 96 were males and 82 were females; 171 were white and 7 colored; 101 were born in the United States, 73 in foreign countries and 4 unknown; 41 were of American parentage, 112 of foreign parentage and 25 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 84 cases and 0 deaths; scarlatina, 22 cases and 1 deaths; typhoid fever, 10 cases and 1 death; measles, 147 cases and 2 deaths; tuberculosis, 65 cases and 17 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 15, whooping cough 1, heart disease 25, bronchitis 1. There were 7 deaths from violent causes. The number of children who died under one year was 26; the number under five years, 39. The number of persons who died over sixty years of age was 61. The deaths in hospitals and public institutions were 76.

BIRTH OF TRIPLETS IN QUINCY. — Report from Quincy, Mass., states that on June 10, Mrs. Myer Winer, of that city, gave birth to triplets, two boys weighing five pounds each and a girl weighing four and one-half pounds. The girl and one of the boys died after a few hours.

GRADUATION OF NURSES AT LONG ISLAND HOSPITAL. — At the graduation exercises of the Long Island Hospital Training School for Nurses, held last week, diplomas were awarded to thirteen pupils of the institution. Addresses were made by Dr. Laura Hughes, and by Dr. Theodore J. Eastman, of Boston.

FINES FOR ILLEGAL TRAFFIC IN COCAINE. — Before the Boston municipal court last week a dealer in this city was fined a total of $135 on four counts: For having cocaine in his possession; for being present where cocaine was sold; for selling cocaine; and for assault and battery on the agent who detected the sale. Two of his associates, one from Boston and one from Providence, R. I., were also fined $25 each for being present where cocaine was found.

EXHIBIT OF ASSOCIATION FOR CONSERVATION OF VISION. — There is at present on view at 5 Park Street, Boston, an exhibit of the American Association for the Conservation of Vision, intended to illustrate the ways in which eyesight may be injured or impaired and to instruct the public in the proper use of the eyes. This exhibit, which was orginally prepared for the International Blind Workers' Exposition, in New York, has lately been shown at the Child Hygiene Exhibit, recently held in Chicago.

RELATION OF STATE BOARD OF HEALTH TO HOSPITALS FOR CONSUMPTIVES. — In the Massachusetts State Senate, on June 5, the committee on public charitable institutions reported favorably "a bill providing that instead of the State Board of Charity, the State Board of Health shall receive written reports of the trustees of hospitals for consumptives at the end of each quarter, and that the State Board of Health shall appoint an executive secretary to the trustees of hospitals for consumptives at a salary of $5,000, who shall at all times be under the supervision and control by the State Board of Health. The bill is based on the petition of Edward F. McSweeney."

REPORT OF THE DEACONESS HOSPITAL. — The recently published annual report of the Deaconess Hospital, Boston, presents the record of work of this institution for the calendar year 1910. During this year 1,051 patients were received into the Hospital, and 7,639 calls were made by the district nurses. Ten nurses were graduated from the training-school. Attention is called to the need of enlarging the hospital building and of establishing a nurses' home. For these purposes the sum of $100,000 is required. The report contains a description and attractive picture of the Deaconess Hosiptal now in process of erection at Concord, Mass., to which reference has been made in previous issues of the JOURNAL.

REPORT OF THE SCHOOL FOR FEEBLE-MINDED. — The sixty-third annual report of the trustees of the Massachusetts School for the Feeble-Minded, at Waltham, Mass., describes the work of this institution for the year ending Nov. 30, 1910. The number of inmates at the close of that year was 1,430, of whom 1,200 were at Waverley, Mass., and 230 at Templeton, Mass. The steady increase in numbers makes the present accomodations already inadequate. This year an entirely new hospital for adult males is requested, and in the near future some provision must be made for a colony for the segregation of the criminal defectives. The report of the superintendent, Dr. Walter E. Fernald, tabulates the statistics, and elaborates the details of work of the school. There is appended an excellent monograph on classification and method of training and instruction.

BEQUESTS TO MEDICAL CHARITIES. — An attested copy of the will of the late Miss Marion R. Lord, of Wells, Me., who died on Jan. 5, 1910, was filed last week before the Suffolk Probate

Court, Boston. Among numerous bequests to local charitable institutions, it contains one of $2,000 to the Industrial School for Crippled and Deformed Children, and two of $1,000 each to the Boston Floating Hospital and the Newton (Mass.) Hospital.

The will of the late Joseph Descalzo, of Cambridge, Mass., who died on June 5, was filed last week at the East Cambridge Probate Court. It contains a bequest of $1,500 to the Children's Hospital, Boston, and one of $1,000 to the Perkins Institute for the Blind, Boston.

The will of the late Arthur J. C. Sowdon, of Boston, which was filed on June 6, in the Suffolk Registry of Probate, contains a bequest of $1,000 to the Industrial School for Crippled and Deformed Children, "as a thank offering for partial recovery from severe illness."

Two Living Centenarians. — In the issue of the Journal for June 16, 1910, we noted, with pleasure, the longevity and persistent good health of Mrs. Lavinia Parks, of Russell, Mass., who is locally reputed to have been born on June 6, 1809, at Blandford, Mass. Mrs. Parks has for another year survived the vicissitudes of life, and celebrated last week the supposed one hundred and second anniversary of her birth. She is said to be still in excellent bodily and mental health, though her hearing and eyesight are beginning to fail.

Mrs. Susan E. Locke, of Lynn, Mass., celebrated last week the supposed centennial anniversary of her birth, by driving in a motor car to Bass Point, Nahant. She is said to have been born in 1811, at Burlington, Vt., the oldest of a family of twelve children. After her marriage she lived for a time in Wilmington, Mass., but for the past thirty years has been a resident of Lynn. She is said to exhibit a remarkable degree of physical and intellectual vigor and alertness. She has three living daughters, (two of whom are twins), fourteen grandchildren, nine great-grandchildren and five great-great-grandchildren.

Hours of Work for Nurses. — In last week's issue of the Journal we published an editorial on "Hours of Work for Nurses." In this connection the following letter, printed in a Boston daily paper, on June 5, seems pertinent and deserving of republication.

"I have noted remarks of Mayor Fitzgerald and others on 'Nurses' Hours,' in Boston hospitals. Can I trespass on your space and call attention to the way it struck me from what I saw at the Massachusetts General, as a patient. Nurses came on duty at 7 A.M., after having had their breakfast, had time at noon for lunch and time for supper before going off duty at 7 P.M. Other time off daily was at least one hour and sometimes four (Sundays and holidays) and lectures occurred frequently; at such times they went off duty at the ward they were attached to. Actual time on duty approached eight hours nearer than twelve. After graduating at the end of three years' service, nurses get $21 a week or better and their board, and good nurses are employed a good portion of their time. A girl has to be fitted by nature to become a good nurse. Their time is not their own, but in what profession can a young woman get better pay? Hospitals take lots of money to run. If a nurse could be employed by law only eight hours a day, could the hospitals do as much with the means at their command as they do and could the nurses get the experience they do in the same time?

"Is there any school that will board a pupil, give the scholar the training the City or Massachusetts General Hospitals do and pay them something toward their clothing?"

An Ex-Patient.

Reorganization of Massachusetts Infant Asylum. — The board of directors of the Massachusetts Infant Asylum, after recent careful study of the affairs of the institution, has issued a plan for its reorganization.

"An investigation of the field of infant charities in Boston, with the view to ascertaining whether there exists any unnecessary duplication of service, has shown that at the present time there are not enough hospital beds for infants. It would, therefore, be a serious loss to the community if the work of this institution should be impaired in its vigor or efficiency.

"Without criticising the managment in the past, the Board is convinced that present conditions require certain marked and important changes in administration, which are in direct line with the progressive idea of bringing similar medical-social institutions into close relations with each other. To afford the best opportunities for the study of infants' diseases and proper facilities for teaching, it is essential that the medical schools should serve as the scientific centers for the different groups of institutions, of which the infant charities perhaps form the most important group of all. In accordance with this general plan it was decided that it was wise to change the system of medical service of the Massachusetts Infant Asylum, to provide that a physician-in-charge, who is a recognized specialist in infants' diseases and who is directly connected with the Harvard Medical School, shall be given a continuous service, and be held responsible for the medical administration of the hospital, with such assistants as he may select, to be appointed by the Board. Dr. Henry I. Bowditch has been appointed physician-in-charge. by the board of directors, having been nominated by the Corporation of Harvard University."

Dr. Arthur I. Kendall, of Somerville, Mass., instructor in preventive medicine and hygiene in the Harvard Medical School, has also been appointed to have charge of the bacteriologic and other laboratory work of the asylum.

"In making the changes outlined above, the board of directors wishes to express its appreciation of the long and devoted services of the members of the retiring medical staff, who have resigned in order that the new system may go into effect."

In connection with this reorganization arises the question of the desirability of changing the name of the asylum.

"The advisability of changing the name of the institution has been under consideration for a long time, and the Board feels very strongly that it should be done as soon as possible, with the general consent of the Corporation. The word 'asylum' is associated in the popular mind with much that is unpleasant in the past, and for this reason alone it is being rapidly discarded. Moreover, it no longer adequately or correctly describes our work, which is essentially that of a modern hospital with an effective social-service department. Of the various names which have been suggested, the most desirable one seems to be the Massachusetts Infant Hospital, which necessitates the change of only one word."

The reorganization and proposed extension of the work of this institution make necessary a larger annual income to provide for its running expenses. The directors, therefore, make appeal to the public for subscriptions to the amount of $12,000 each year for this purpose. For forty-four years the Massachusetts Infant Asylum has rendered to this community admirable service in both remedial and preventive work; and at this time, when it is planning a larger scope and greater opportunity of future service, its needs should not be unheeded by generous friends of medical charity.

## NEW YORK.

DIRECTOR OF PHŒNIX RESEARCH LABORATORIES. — At a meeting of the trustees of Columbia University, held on June 5, Prof. M. I. Pupin was appointed director of the Phœnix Research Laboratories. Among the gifts announced was $33,133 from the committee appointed to raise the William T. Bull memorial fund.

COMMENCEMENT OF NEW YORK UNIVERSITY. — At the seventy-ninth annual commencement of New York University, on June 7, the degree of Doctor of Medicine was conferred on 68 graduates and that of Doctor of Veterinary Surgery on 6. E. Hausmann received the degree of Doctor of Science and C. F. Longfellow that of Bachelor of Science in Medicine. In the medical school the Glover C. Arnold surgical prize was awarded to Isadore S. Faust, and the three Valentine Mott medals for anatomical preparations to Isidor Elau, Luigi Celano and Alexander Aisman.

COMMENCEMENT AT COLUMBIA UNIVERSITY. — At the one hundred and fifty-seventh annual commencement of Columbia University, on June 7, the degree of Doctor of Medicine was conferred on 69 graduates, that of Doctor of Pharmacy on 3, and that of Pharmaceutical Chemist on 11. Among those who received the honorary degree of Doctor of Laws was Dr. Charles F. Chandler, Mitchell Professor of Chemistry at Columbia. The degree of Doctor of Science was conferred on Dr. Charles Francis Stokes, College of Physicians, 1884, now Surgeon-General of the United States Navy.

CONFERENCE OF NATIONAL HOUSING ASSOCIATION. — The National Conference of the National Housing Association, was held in New York on June 5 and 6. Numerous papers were presented. The sessions were at the Charities Building, on Fourth Avenue, and visits were made to congested districts of the city under the direction of inspectors of the Tenement-House Department. One point appears to have come prominently to the front at the conference. The tenement is regarded by all who have investigated it scientifically as a habitation to be excused for existing only on the score of necessity. The visiting experts saw what New York has done to improve its tenements, not only by legislation, but by private effort; yet every allusion to the erection of similar buildings in other cities was always made with an expression of regret. On the other hand, Miss Helen Parrish, of Philadelphia, and J. H. Hanson, of Youngstown, Ohio, presented the results of actual experience of other communities in the provision of small but comfortable and sanitary dwellings for families who can afford only from $10 to $20 a month; showing that there was really nothing charitable about their erection, as they had proved to be a good business investment. The necessity for the proper supervision of housing in the smaller cities, as well as the larger ones, was brought out by Elmer S. Forbes, chairman of the State Housing Committee of the Massachusetts Civic League. In the towns with a population of from 2,500 to 25,000, he said,

there might be discovered, if not slum districts, at least slum spots, which might easily spread. He thought the community should be enlightened as to the danger from these, and recommended the adoption by the smaller towns of a simple tenement-house law adapted to their conditions. Luther E. Lovejoy, secretary of the Housing Commission of Detroit, presented a paper in which special stress was laid on the fecundity of the house-fly. "Between Spring and Fall," he declared, "two industrious flies can become the proud progenitors of at least nineteen quintillions (19,000,000,000,000,000,000) of lusty maggots." This brought up the subject of the disposal of garbage in cities, and Virgil G. Marani, of Cleveland, advocated the use of paper garbage receptacles, which might be removed and destroyed with the waste. These, he said, would cost very little, and then there would be no more dirty cans, from which it was practicably impossible to remove every trace of garbage.

## Current Literature.

### Medical Record.

June 3, 1911.

1. Synnott, M. J. *The Present Status of Inoculation Therapy. The Application of Opsonins and Vaccines in the Treatment of Bacterial Infections, as Taught by Wright at St. Mary's Hospital, London.*
2. Lynch, J. M. *An Easy and Certain Method of Diagnosing and Following a Fistulous Tract.*
3. McConkey, T. G. *Are Pneumonia and Rheumatism Specific Infections?*
4. *Roberts, D. *The Causation of Belching.*
5. Walson, C. M. *Acute Gonorrheal Epididymitis. Report of One Hundred Cases Treated in the Venereal Clinic of the St. Louis Hospital Department.*
6. Gulliver, F. D. *Mental Suggestion as a Substitute for Anesthetics in the Removal of Tonsils and Adenoids from Children.*

4. Roberts makes some interesting observations on belching. Gas in the stomach, he says, is rarely anything but swallowed air, as true fermentation takes place in the stomach only as a result of actual stasis. Slight eructation of gas after a full meal has no pathological significance. Belching is a voluntary act performed in an exaggerated manner to relieve real or fancied epigastric distress. The most exaggerated form of belching results from emotional states. Gas is complained of in certain abdominal conditions by patients who do not belch. This is especially common in the discomforts associated with disease of the biliary tract, appendix and colon. The distress in these cases is not due to gas at all. [L. D. C.]

### New York Medical Journal.

May 27, 1911.

1. Hibbs, R. A. *An Operation for Progressive Spinal Deformities.*
2. Shoemaker, G. E. *Papillary Carcinoma of the Bladder with Metastasis to the Tarsus and Metatarsus.*
3. Nammack, C. E. *Education in Social and Sexual Hygiene.*
4. Schaefer, T. W. *Why are we Opposing Reforms in Medical Nomenclature?*
5. Pfender, C. A. *Medicozoölogical Nomenclature; the Correct Name of the Protozoön of Syphilis.*
6. Mason, F. S. *Lactic Ferments in Genito-Urinary Work.*
7. Holloway, T. B. *Methyl Alcohol Amblyopia.*
8. Tousey, S. *The X-Ray a Duty in Cancer.*
9. Gleason, J. H. *A Plea for the Early Diagnosis and Early Surgical Treatment of Mammary Cancer with Special Reference to Obtaining Better Results.*

June 3, 1911.

1. McPhee, J. J. *Practical Treatment of Nervous People.*
2. Vineberg, H. N. *Tuberculosis of the Kidney in Women.*
3. Louria, L. *Acute Hematogenous Infection of the Kidney and Pyelitis of Pregnancy; Their Medical Treatment.*
4. Shute, D. K. *The Influence of Pregnancy on Diseases of the Eye.*
5. McDonald, E. *Immediate or Deferred Operation in Tubal Pregnancy.*
6. *McGlinn, J. A. *The Relation of Uterine Myomata to Heart Disease.*
7. Samuels, A. *Acetone in Inoperable Cancer of the Uterus.*
8. Grant, J. P. *Carcinoma of the Abdominal Wall in a Boy of Seventeen Years.*
9. Amsden, G. S. *Note on the "Liquor Bellostii" Test in Paresis.*

6. McGlinn made a post-mortem study of 113 cases of uterine myomata in order to determine the relation which these tumors bear to chronic heart disease. He concludes that a definite entity of a fibroid heart cannot be sustained. Uterine myomata occurring during middle and advanced life are practically always associated with sclerotic heart lesions, but these are a part of a general process and are not related to the fibroid. Many of the cardiovascular symptoms in myoma cases are due to secondary anemia *per se*. [L. D. C.]

### The Journal of the American Medical Association.

June 3, 1911.

1. Finney, J. M. T. *Some Problems in Gastro-Intestinal Surgery.*
2. *Brem, W. V. *The Diagnosis of Early Pulmonary Tuberculosis.*
3. *Bell, W. H. *The Need of the Early Diagnosis of Tuberculosis from the Public Health and Prognostic Points of View.*
4. Walsh, J. *The Folly of Sending Tuberculous Patients Away from Medical Supervision.*
5. Henson, G. E. *Report of a Case of Tertian Malaria Simulating Appendicitis.*
6. Kennedy, F. *The Diagnosis of Tumor or Abscess Formation in the Temporosphenoidal Lobe.*
7. Penrose, C. A. *Simplicity of Living, and the Study of the Normal in Medicine.*
8. Hummel, E. M. *The Rarity of Tabetic and Paretic Conditions in the Negro. A Case of Tabes in a Full Blood Negress.*
9. *McDonald, C. L. *Results in the Treatment of Thirty Cases of Otitis Media by Vaccine Therapy.*
10. Dutton, W. F. *Vanadiumism.*
11. *Davis, L. *Two Cases of Appendix Abscess Drained by Rectal Puncture.*
12. Pipes, H. F. *X-Ray Localization by Construction. A Modification of the McKenzie-Davidson Method.*
13. Ravine, W. *Case of Illuminating-Gas Poisoning: Patient Successfully Treated.*
14. Higbee, B. *Frontal Sinus Curette.*
15. Amberg, E. *Transillumination of the Mastoid Process as an Aid to Diagnosis.*
16. Woodbury, F. T. *Technic for Hypodermic Injections.*
17. Walson, C. M. *A Painless Mercurial Injection for Syphilis.*

2. Brem states that tuberculosis is the most common of all diseases and causes a greater number of deaths than any other. Failure to diagnose it early is disastrous and reprehensible. There is no disease in which neurasthenia is as common as in tuberculosis. It is often one of the early symptoms. Physicians should have a more thorough knowledge of tuberculosis than of any other disease and should be trained to the highest degree in methods for diagnosing it in its early stage. The greatest hope for the ultimate control of tuberculosis lies in the education of the physician in early diagnosis.

3. Bell says that the profession is not educated to a proper attitude toward the early diagnosis of pulmonary tuberculosis, that it does not train itself minutely enough in the early signs and does not avail itself of the valuable corroborative tests which science has placed at our disposal.

9. McDonald claims that in subacute otitis media no other means of treatment is capable of producing such uniformly good results as vaccines. Their early use should greatly diminish the number of chronic cases so common. Results in chronic cases are, however, more variable. The use of vaccines as a routine should not be advised in chronic cases, but should be tried when other measures fail.

11. Davis does not advocate rectal puncture in all cases of large appendix abscesses, but he believes that there are certain definite, though narrow, indications for this procedure. The type is that of the late or neglected case, when there is profound sepsis and exhaustion and a large mass to be felt bimanually and bulging into the rectum. In such cases puncture is easy and generally followed by great immediate relief, and may often tide the patient over till his condition warrants further operative procedure.

[E. H. R.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 19.

MAY 11, 1911.

1. FRIEDRICH, P. L. *Acute Gangrene of Gall Bladder with and without Gallstones in the Bladder.*
2. SCHITTENHELM, A., AND WERCHARDT, W. *Cellular Anaphylaxis, Enteritic Anaphylaxis, Conjunctivitic and Rhinitic Anaphylaxis (Hay Fever), and Their So-called Specific Cures.*
3. STUERTZ, E. *Instantaneous Roentgen-Ray Pictures and the Test of the Roentgen-Ray Apparatus by Its Ability to Take Instantaneous Pictures of Moving Internal Organs.*
4. ENGELEN. *Measurement and Importance of Abdominal Pressure.*
5. *ROUBITSCHEK, R. *Drug Therapy of Hyperacidity.*
6. BECKER, T. *Hysterical Pseudo-Aphasia.*
7. *REIFFERSCHIED, K. *Intra-Uterine Fetal Respiratory Movements.*
8. LIEK. *Foreign Bodies in the Uterus as a Means of Avoiding Conception.*
9. FRANZ. *Bullet Injuries to Joints and Fractures of Long Bones by Bullets in the Southwest African Campaigns, 1904–7.*
10. WAGNER, A. *Penetrating Bullet Wounds of the Abdomen without Visceral Injury.*
11. HOHMEIER, F. *Bridging over an Extensive Urethral Defect by Plastic Operation with Fascia.*
12. SONNENBERG. *Technic of Intravenous Salvarsan Injection.*

5. Roubitschek has tried out the use of hydrogen peroxide in cases of hyperacidity of the stomach. He finds the fluid preparations more satisfactory than the solid combinations. He first advocates internally ½% solution, 300 ccm., three times a day. If this does not work he advocates a ¾% or 1% solution. One per cent solution may cause vomiting and stronger solutions are quite apt to. After a few days' use the pain will disappear and will not return again. He advocates also restrictions in diet.

7. By a series of tracings from different parts of the mother Reifferschied has demonstrated what he feels sure are respiratory fetal movements. He rules out these movements as being uterine because they are only obtained when the tambour is over that part of the uterus where the child touches. They are not synchronous with any other movements of mother or child.

[C. F. JR.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 18.

MAY 2, 1911.

1. *V. PIRQUET, C. *The Double Reaction of Inoculation with Cow-Pox.*
2. *SCHMIDT, A., AND DAVID, O. *The Therapeutic Use of Dioxygenated Air in Man.*
3. *EMMERICH, R. *New Evidence of the Causation of Cholera by Nitrous Acid.*
4. HOHMEIER. *A New Procedure for Covering Tracheal Defects.*
5. MARTIN, E. *Continuous Rectal Salt Infusion with Visual Control.*
6. KANSCH, W. *High Irrigation of the Intestine for Weakness of the Sphincter.*
7. NEUHAUS, M. *Experiences with Salvarsan, especially in Syphilis of the Central Nervous System.*
8. BERING, F. *A Case of Reinfection with Syphilis.*
9. STERN, R. *Cæsarean Section on the Dead.*
10. BOESL. *A Rare Cause of Mercurial Poisoning.*
11. RICHTER. *The Royal Frauenklinik at Dresden as a School for Physicians and Midwives.*
12. VIDAL. *Most Effectual Check for Infant Mortality.*
13. LENGMANN, P. *A New Shoe for the Prevention and Cure of Insufficientia Pedis.*
14. MATHES, P. *The Causes of Incarceration in Retroflexio Uteri Gravidi.*

1. v. Pirquet gives the results of a series of tests with cowpox vaccine along the lines of earlier work with serum sickness. He finds a striking similarity of results and summarizes as follows: (1) As in serum sickness, so also after injection of cowpox vaccine, two forms of allergy may occur; namely, the immediate and the accelerated reaction. (2) The accelerated reaction follows either the cutaneous use of active lymph or the subcutaneous injection of killed lymph. (3) The "double reaction," as in serum sickness, may occur, i. e., successive appearance of immediate and of accelerated reaction.

2. Assuming the value of high altitudes for certain conditions, the writers evolved the thesis that the beneficial effects result from diminution of oxygen, and that the dangers are due to low atmospheric pressure. They then constructed an apparatus to administer air with diminished oxygen at existing pressure. Animal experiments showed that a reduction of the oxygen to 12–14% caused intense hyperemia of the lungs. The treatment was then tried on twenty patients, most of whom had chronic bronchitis or anemia of some sort, and the results were encouraging.

3. Emmerich brings forward new evidence in favor of the theory that the primary poison in cholera is nitrous acid. (This question deserves careful investigation by those having the opportunity to study cholera or allied diseases.)

Nitrous acid was found in considerable amounts in the vomitus, in the urine and in juice squeezed from the wall of the small intestine in a number of cases, but not in the blood. The writer asserts that this finding is pathognomonic for cholera and closely allied conditions.

[G. C. S.]

No. 19. MAY 9, 1911.

1. *LÜDKE, H., AND STURNS, J. *Orthotic Albuminuria in Tuberculosis.*
2. KLEIN, G. *Cause and Significance of Menstrual Hemorrhage.*
3. MEYER, H. *Experimental Sudies of Sensitization to Röntgen Rays by Heat Irradiation.*
4. ABELIN, J. *A New Method of Detecting Salvarsan. (Preliminary Communication.)*
5. MATHES, P. *The Influence of Thyroid Extract on Coagulation of Blood.*
6. SICK, P. *Radical Care of Femoral Hernia by a Plastic on the Pectineus Muscle.*
7. MEIROWSKY. *The Connection Between the Skin and the Adrenals.*
8. GRUND, G. *The Effect of Chloromorphid on Man.*
9. BRÜCKNER, G. *An Epidemic of Typhoid in an Institution for Children.*
10. SASSE, A. *Aseptic Extension by Boring through the Bone.*
11. SCHREYER. *Pulmonary Plague in North China.*

12. Gruber, G. B. *Pyemia following Acute Staphylomycotic Spermatocystitis.*
13. Ruge, E. *Joint Mice Limited to the Recessus Subfemoralis.*
14. Blumm, R. *Obstetric Forceps for Breech Presentation.*
15. Glaser, R. *General Principles for the Diagnosis, Indications and Treatment of Gallstone Disease.*

1. Having studied 140 cases of tuberculosis, the writers demonstrated orthotic albuminuria in a surprisingly large proportion. None of the cases were febrile and none were bedridden. In the early cases albuminuria was demonstrated in a very large proportion after the patient had stood for an hour. It was somewhat less constant in the later stages of the disease. The question is raised whether this test may not be of value for early diagnosis.
[G. C. S.]

No. 20. May 16, 1911.

1. *Hofmeier. *The Question of Auto-Infection in Obstetrics.*
2. *Heller, A. *Volvulus of the Sigmoid and Hirschsprung's Disease.*
3. *Dreyfus, G. L. *The Significance of Etiology in the Diagnosis of States of Mild Depression.*
4. Martins, K. *Deaths following Injection of Salvarsan in Diseases of the Heart and Arteries.*
5. Ploeger, H. *Contributions to the Technic of Intravenous Injection of Salvarsan.*
6. Brauer, A. *A Source of Error in the Sero-Diagnosis of Echinococcus Infection.*
7. Hackenbruch. *The Permanent Cure of Ptosis of the Colon by a Plastic on the Pelvic Floor.*
8. Oppenheimer, R. *Functional Hypersecretion of the Glands of the Mucosa of the Bladder.*
9. Kolb, K. *A Contribution to the Untoward Results with Antimeristem.*
10. Rothschild, J. *The Best Treatment of Uncomplicated Breech Presentations.*
11. Hoffmann, K. F. *Prevention and Treatment of Mosquito Bites.*
12. Grassl. *Intestinal Plates.*
13. Hofman, A. *A New Method of Curing Prolapse of the Rectum in Women.*
14. Spaet. *The König-Ludwig Spring in Fürth i. B.*
15. Scheglmann, A. *Gastric Fever.*

1. Hofmeier raises the question whether sepsis at childbirth may not sometimes result from a focus of infection in some part of the body other than the genital tract, the latter becoming infected as a locus of lessened resistance. He presents facts which seem to support this hypothesis.

2. Heller regards volvulus of the sigmoid as a sequel of the same congenital enlargement of the sigmoid which in childhood is called Hirschsprung's disease.

3. The writer gives an interesting analysis and discussion of the milder depressive states often spoken of as neurasthenia.
[G. C. S.]

Deutsches Archiv für Klinische Medizin. Band 102.

Heft 3–4. April 12, 1911.

1. Hesse, E. *Distribution of Goitre in Saxony with Special Regard to the Geologic Relations.*
2. v. Monakow, P. *Functional Tests of the Kidneys.*
3. *Schlayer. *Investigations on the Functional Power in Chronic Vascular Nephritis.*
4. Siebeck, R. *Gaseous Exchange between the External Air and the Alveoli.*
5. Grafe, E. *Increase of Metabolism in Chronic Leukemia and Its Cause.*
6. Boehm, G. *Spastic Obstipation and Its Relation to Antiperistalsis.*

3. Schlayer in this study has taken up a series of cases which he designates as chronic vascular nephritis. His study seems to be a thorough one and is based on the study of the eliminative power of the kidney as shown by a study of water and salt excretion, and also sugar and potassium iodide excretion as representatives of foreign body substances. The weak point in the article seems to be the classification of the form of nephritis from a histopathologic point of view.

Of the chronic vascular nephritides two types exist: one accompanied with polyuria, the other with a diminished quantity of urine. The form with polyuria has a hypersensitive condition of the renal vessels and has low specific gravity irrespective of the intake of water. In this type the NaCl is excreted but always diluted. In the oliguric type the amount of fluid is diminished because of injury to the renal vessels and the NaCl cannot be excreted.

From a prognostic point of view this difference is important. In the one type the urine is highly concentrated; in the other not.
[C. F., Jr.]

Revue de Médicine.

May, 1911.

1. Oettinger, W., and Marie, P. L. *Banti's Disease.*
2. *Rathery, F. *The Value of the Potato as a Diet for Diabetics.*
3. Devic, E., and Gardère, C. *Pericardial Friction Sounds Transmitted Far from the Cardiac Area in a Case of Tuberculous Pericarditis.*
4. Oebré, R. *Experimental Inoculations of the Diplococcus of Weichselbaum Contained in the Cerebrospinal Fluid in Meningitis.*
5. Belkowski, J. *Actinomycosis of the Base of the Cranium and of the Meninges: Diabetes Insipidus.*
6. Lépine, R. *The Frequency of Diabetes.*

2. The potato has been advised in diabetes as the most easily assimulated of the carbohydrates. Some have advised that it be eaten in any quantity that may be desired. The authors show by experiment that such advise is unfounded, and, moreover, that potato in many instances produces a greater glycosuria than a similar amount of other of the purely carbohydrate foods. In conclusion they state most wisely that "Every diabetic has his personal coefficient for the utilization of carbohydrates, quantitatively as well as qualitatively. The physician cannot establish a proper treatment for his patient without determining first these two coefficients."
[L. H. S.]

Revue de Chirurgie.

May, 1911.

1. Déve, F. *Post-Operative Hydatid Intoxication.* (To be continued.)
2. Quenu, E. *Note on a Case of Arteriovenous Anastomosis for Gangrene from Endarteritis.*
3. Binet, A., and Homant, A. *Isolated Fractures of the Lesser Trochanter.*
4. Heully, L. *Slipping Hip: An Anatomic, Experimental and Clinical Study.* (To be continued.)

Bullettino delle Scienze Mediche.

April, 1911.

1. Tullio, P. *A New Mode of Recording the Respiration in Man.*
2. Doniselli, C. *The Functions of the Cochlea.*
3. Lussana, F. *Action of the Metallic Salts on the Irritability of the Frog's Heart (Preliminary note).*
4. *Santine, C. *Catheterism of the Ureters in the Cure of Pyelitis (Clinical note).*
5. Cantelli, L. *Contribution to the Study of Primary Sarcomata of the Stomach.*
6. Berti, G. *Contribution to the Semeiologic Morphology of the Thorax of the Newborn in Relation to the Apex of the Heart.*

4. Santini concludes, from study of the literature and of a personal case, that in all forms of pyelitis, especially initial, therapeutic catheterism of the ureters and lavage of the pelvis should be tried before resorting to nephrotomy; that such maneuvre is free from danger, easy, and often sufficient alone to cure the patient, but that it should not be employed in neoplasm or tuberculosis of the pelvis. The most satisfactory substance for lavage is silver intrate in solutions of varying concentration. In forms where anäerobes are associated with colon bacillus, he proposes the use of hydrogen peroxide.
[R. M. G.]

IL POLICLINICO.

APRIL, 1911.

SURGICAL SECTION.

1. MARINACCI, S. *Experimental Researches on Variations of the Renal Function in Unilateral Nephropathics.*
2. FICHERA, G. *Recent Contributions to the Doctrine of Neoplasms. II. Oncogenic Equilibrium and Histogenic Chemotherapy.* (Continued.)
3. CIGNOZZI, O. *Some Congenital Cysts of the Neck of Branchial and Para-Branchial Origin. Pathogenetic and Clinical Study.* (To be continued.)

PROGRESSIVE MEDICINE. VOL. XIII. NO. 2.

JUNE, 1911.

1. *COLEY, W. B. *Hernia.*
2. GERSTER, A. G. *Surgery of the Abdomen, Exclusive of Hernia.*
3. CLARK, J. G. *Gynecology.*
4. STENGEL, A. *Diseases of the Blood, Diathetic and Metabolic Diseases. Diseases of the Thyroid Gland. Nutrition and the Lymphatic System.*
5. JACKSON, E. *Ophthalmology.*

1. Coley's article presents a "digest of advances, discoveries and improvements" in the knowledge and operative treatment of hernia. He considers particularly Wiener's advocacy of using silver wire and linen thread in such operations, intra-abdominal and external herniæ of the foveæ supravesicales, the anatomy and treatment of undescended testis, non-incarcerated hernia, the process of incarceration in hernia, congenital sacs in inguinal hernia, hernia duodenojejunalis Treitzii, the appendix as the isolated contents of the sac in incarcerated herniæ, traumatic herniæ, hernia obturatoria and hernia cruralis, herniotomy without preceding taxis, herniæ of the omental bursa with abnormal openings, appendicitis within the hernial sac, permanent results of operation for epigastric hernia, ruptures of the gut due to taxis, double-loop femoral hernia, and retroperitoneal hernia. The article is a valuable epitome of recent literature. [R. M. G.]

PROCEEDINGS OF THE ROYAL SOCIETY OF MEDICINE.

VOL. IV, NO. 5. MARCH, 1911.

1. MCCARDIE, W. J. *A Death Due to Inspiration of Gummatous Material from a Gumma which had Burst during Chloroform Anesthesia.*
2. BLUMFELD, J. *Nasal Reflex during Anesthesia.*
3. GILL, R. *Anesthesia in Postpharyngeal Abscess.*
4. HUGHES, C. *Note on a Case of Cheyne-Stokes Respiration during Anesthesia.*
5. COLEMAN, F. *A New Form of Stopcock for Gas and Air Administration.*
6. SMITH, E. B. *Spasmus Nutans.*
7. PARKINSON, J. P. *Congenital Dilatation of the Colon.*
8. CANTLEY, E. *Cerebral Athetotic Diplegia.*
9. FITZWILLIAMS, D. C. L. *Congenital Absence of the Pectoral Muscles.*
10. CARR, J. W. *Anorexia Nervosa.*
11. WOODFORDE, A. W. G *Specimens from a Case of "Delayed Chloroform Poisoning."*
12. SPRIGGS, E. I., AND MOLONY, J. B. DE W. *Angiomata of the Left Loin and Leg.*
13. RIVIERE, C. *Congenital Aortic Stenosis.*
14. BUNCH, J. L. *Lichen Spinulosus.*
15. STEPHENSON, S. *The Oculomotor Type of Polio-Encephalitis.*
16. *ROLLESTON, H. D., AND TAYLOR, C. H. S. *Mollities Ossium of Forty-Five Years' Duration.*
17. POYNTON, F. J. *Imperfect Osteogenesis.*
18. KIDD, F. *Imperfect Osteogenesis.*
19. SHAW, H. B. (1) *Two Cases Showing Unusual Ulceration of the Skin.* (2) *Syphilis, Chyliform Ascites, Dropsy and Albuminuria.*
20. ROLLESTON, J. D., AND MACNAUGHTON, N. S. *Report on Tumor of the Upper Lip.*
21. BUTTEN, F. E. *Progressive Spinal Muscular Atrophy of Infants (Werdnig-Hoffmann).*
22. ADAMSON, H. G. *Unilateral Pigmentary Nevus.*
23. DAWSON, G. W. *Case of Purpura.*
24. LITTLE, E. G. G. (1) *Case for Diagnosis.* (2) *Nevus Pigmentosus, Verrucosus et Pilosus.* (3) *Two Cases of Nevus Unius Lateris.*
25. MACLEOD, J. M. H. *Small-Spored Ringworm of the Scalp in a Woman Aged Twenty-Three.*
26. SEGNUEIRA, J. H. *Non-Ulcerating Tuberculide.*
27. SCHMIDT. *A Universal Safety and Protective Tube Stand for All Kinds of Fluoroscopy and Radioscopy.*
28. BUTCHER, W. D. *Bauer's Qualimeter.*
29. TAYLER, H. P. *Colles's Fracture.*
30. JONES, H. L. *Unusual Form of Contraction of the Fingers.*
31. REID, A. D. *Demonstration of Lantern Slides of Three Cases.*
32. SCOTT, S. G. *Demonstration of Skiagrams.*
33. MELVILLE, S. *Unusual Case of Aneurysm.*
34. KNOX, R. *Demonstration of Skiagrams.*
35. BATTEN, G. B. *Three Simple Pieces of Apparatus.*
36. SAVAGE, W. G. *Diseases of the Cow (Excluding Tuberculosis) Affecting the Milk in Their Relationship to Human Disease.*
37. ROSE, F. *Tuberculous Tonsillitis.*
38. GRAHAM, C. *Bilateral Tuberculous Disease of Tonsils with Tuberculous Laryngitis.*
39. HILL, W. *Demonstration of the Hill-Herschell Method of Combined Direct and Indirect Gastroscopy.*
40. HASTINGS, S. *Ulceration on the Left Tonsil.*
41. TILLEY, H. *Plaster Casts of Unusual Malformation of Upper Jaw.*
42. PEYLER, L. H. (1) *Tuberculosis of the Vocal Cords in a Young Man.* (2) *Tuberculous Ulceration of the Larynx.* (3) *Extensive Malignant Ulceration of Pharynx and Tonsils.*
43. PETERS, E. A. *Primary Carcinoma of Tonsil.*
44. DONELAN, J. *Swelling at Junction of Right Vocal Cord and Apex of Vocal Process.*
45. MCKENZIE, D. *Papilloma of Larynx in a Child.*
46. BADGEROW, G. W. *Lingual Thyroid.*
47. CATHCART, G. C. *Recurring Aphonia in a Woman Aged Thirty-Six.*
48. WATSON-WILLIAMS, P. *Watson Stricture of the Esophagus.*
49. PATTERSON, N. (1) *Epithelioma of the Epiglottis.* (2) *Primary Sore of the Vestibule of the Nose and Adjoining Skin.*
50. POWELL, H. W. F. *Large Growth in the Larynx.*
51. HILL, W. *Tuberculosis of the Nose and Cheek.*
52. DAVIS, H. J. *Removal of the Upper Jaw in a Man Aged Seventy-One.*
53. EDGECOMBE, W. *Some Observations on Low Blood Pressures.*
54. *ROUTH, A., *et al. The Indications for, and Technic of, Cæsarean Section and Its Alternatives.*
55. STORDY, T. *Absorption of a Permanent Molar Due to an Unerupted Premolar.*
56. PRIDEAUX, W. DE C. (1) *Three Cases of Torus Palatinus.* (2) *Skull from a Barrow, showing Somewhat Symmetrical Mandibular Exostoses.*
57. PROUD, P. J. *Model of a Maxilla with Exostoses.*
58. JOHNSON, A. A. H. *Multiple Supernumerary Teeth preceding a Central Incisor.*
59. LAW, E. *Report on the Fatal Termination of a Case of Deafness in the Right Ear.*
60. DAVIS, H. J. (1) *Caries and Necrosis of Temporal, Parietal and Occipital Bones.* (2) *Extradural Cerebellar Abscess.* (3) *Acute Vertigo, with Repeated Falls, always to the Left.*
61. SCOTT, S. *Fistula of the Ampulla of the Superior Semicircular Canal on the Left Side.*
62. KELSON, W. H. *New Growth of Unknown Nature in the Tympanum.*
63. *CARLYLL, H. B., AND MOTT, F. W. *Seven Cases of Amaurotic Idiocy (Tay-Sachs Disease).*
64. *HOLMES, G. M. *The Pathological Anatomy of a Case of Amaurotic Family Idiocy.*
65. LEVY, A. G. *Asphyxia under Chloroform.*
66. BOYCOTT, A. E. *Uterine Tumors in Rabbits.*
67. EDMUNDS, W. *Action of Pro- and Anti-Thyroid Preparations.*
68. SMYTH, F. R. *On Drugs Used as Local Anesthetics in the Mouth.*

16. The authors report an exceedingly interesting case, with admirable x-rays.

54. This article is a valuable symposium of the latest views on Cæsarean section "in women with contracted pelves who have been long in labor and exposed to septic infection."

63 and 64. The authors present a valuable clinical and pathologic study of amaurotic family idiocy, with excellent illustrative plates and photomicrographs. [R. M. G.]

## Obituary.

### CARL BECK, M.D.

Dr. Carl Beck, a distinguished New York surgeon, died on June 8, at his country home at Pelham Heights, Westchester County. The immediate cause of death was pneumonia, although he had been suffering for some time from Bright's disease and diabetes. He was born at Neckargemuend, Germany, on April 4, 1856, and studied at the Universities of Heidelberg, Berlin and Jena, receiving his degree at Jena in 1879. He came to New York in 1882, and in a few years became widely known in the profession. In addition to his prominence as a surgeon, he was early recognized as an authority in x-ray work, which from the first he constantly employed in his public and private practice. He was professor of surgery and attending surgeon at the New York Post-Graduate Medical School and Hospital, attending surgeon and afterwards consulting surgeon to the German Poliklinik of New York, and attending surgeon to St. Mark's Hospital. Of the last-named institution he was president till January last, when he resigned on account of his failing health. He had great operative skill, and was the inventor of numerous useful surgical devices. He contributed many valuable papers to medical societies and journals, was the author of several excellent works in English and German, including "Roentgen Ray Diagnosis and Therapy," "Surgical Diseases of the Chest," and "Text Book on Fractures." Dr. Beck was a man of unusual culture, and his wide attainments, graceful presence, and suavity of manner made him universally popular. Among the positions of honor which he held were the presidency of the German Medical Society of New York, the American Therapeutic Society, and the Union of Old German Students of America. He is survived by a wife and three children, one of whom, Dr. Carl Eric Beck, is now attending surgeon to St. Mark's Hospital.

## Miscellany.

### A CIRCULAR CONCERNING ACUTE EPIDEMIC POLIOMYELITIS.

The following circular has been issued by the American Orthopedic Association and the American Pediatric Society in reference to acute epidemic poliomyelitis, and addressed to health authorities and boards of health

Anterior poliomyelitis is, so far as known, a communicable disease, being communicated from one patient to another and also by means of a third person. It occurs in epidemics and tends to spread along the lines of greatest travel. There is reason to believe that it is prevented from spreading by quarantine, and with the very great prevalence of the disease in the summer of 1910 it is the opinion of this committee that it is essential that it should be made a reportable disease in all states in order that its presence may be detected and its spread guarded against.

Of particular significance are the so-called aborative cases, where indefinite ailments occur in children in communities where frank paralysis also exists. These abortive cases of infantile paralysis are undoubtedly a source of infection, and their record and study is of much importance. In a community where cases of infantile paralysis occur cases of illness with sudden onset of fever and meningeal symptoms should be closely watched and regarded as possibly infectious. In such cases even recovery without paralysis does not establish the fact, that the case was not abortive infantile paralysis.

All cases of infantile paralysis should be strictly quarantined, sputum, urine and feces being disinfected, and the same rigid precautions being adopted as in scarlet fever. This quarantine should, in the opinion of the committee, last for four weeks in the absence of definite knowledge as to when the infection ends. Children from infected families should not be allowed to go to school until the quarantine is abandoned. The transportation or transfer of acute cases in public conveyances should be strictly forbidden. It would be very desirable to adopt provisional quarantine measures in suspicious cases in a community where an epidemic prevails. The report of all cases of infantile paralysis to the public health authorities should be enforced by the law, and all deaths from this cause should be properly described and registered. A careful study of epidemics by public health authorities is strongly advised.

(Signed)

Robert W. Lovett, M.D., *Chairman.*
Henry Koplik, M.D.,
H. Winnett Orr, M.D.,
Irving M. Snow, M.D., *Secretary.*

### INVESTIGATION OF ANTERIOR POLIOMYELITIS.

The Massachusetts State Board of Health has recently issued to physicians in this Commonwealth two circulars, one calling attention to the regulations of the board relative to the prophylaxis of ophthalmia neonatorum, the other outlining the plans of the board for continuing this summer its investigation of anterior poliomyelitis. The state legislature has approved an increased appropriation for this purpose, and the coöperation of all members of the profession is earnestly invited. Since Nov. 4, 1909, poliomyelitis hac been a notifiable disease, and during the epidemis

which may be expected this season the greatest promptness is urged in reporting suspected cases, and the greatest effort to secure permission for autopsy in those which prove fatal. For the guidance of physicians in treating the disease, the following points are particularly emphasized:

(1). The disease is infectious, though its etiologic agent is as yet unknown.

(2). The disease is contagious and patients should therefore be quarantined and their excreta disinfected.

(3). The disease is probably transmitted by third persons.

(4). Abortive or atypical cases are frequent.

(5). The use of hexamethylamine, is recommended in the treatment and prophylaxis of the disease.

## EXPERIMENTAL MEASLES IN THE MONKEY.

THE weekly report of the United States Public Health and Marine-Hospital Service for June 9, contains a preliminary communication from Dr. John F. Anderson, director of the hygienic laboratory at Washington, D. C., and Dr. Joseph Goldberger, on "Experimental Measles in the Monkey." An unsuccessful attempt to inoculate monkeys with measles was reported by Grünbaum in the issue of the *British Medical Journal* for April 9, 1904. The present authors report four series of similar experiments on rhesus monkeys, in which they produced moderate fibrile reaction, cough, and a sparse eruption. As a result they believe they "have demonstrated the susceptibility of the rhesus monkey to inoculation with the blood of human measles drawn from the general circulation early in the eruptive stage." This conclusion, if hereafter proved to be true, will be one more fact in the cumulating mass of evidence illustrating the close simian kinship of man.

## AIR SICKNESS IN AVIATION.

AN item in the Philadelphia *Public Legder* states that Dr. René Cruchet, of the University of Bordeaux, has recently presented before the French Academy of Sciences an explanation of certain accidents to aviators based on the supposition that they were overcome by "air sickness." This condition Dr. Cruchet described as analogous to mountain sickness and due to sudden changes in the atmospheric pressure. Aviators are said to be often affected, at altitudes over three thousand feet, with quickened respiration and heart-beat, headache, and nausea. In their descent, after partial temporary adaptation to a more rarefied atmosphere, the conditions are reversed, and the rapid increase of pressure leads to palpitation, suffocation, tinnitus, vertigo and somnolence. Dr. Cruchet believes that some of the fatal accidents have been due to the aviator's becoming momentarily unconscious from these physiologic phenomena and thereby losing control of his machine.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 3, 1911

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | 1,334] | 411 | Waltham | 4 | 1 |
| Chicago | 546 | 152 | Brookline | 7 | 2 |
| Philadelphia | — | — | Chicopee | 6 | 2 |
| St. Louis | — | — | Gloucester | 1 | — |
| Baltimore | — | — | Medford | 3 | — |
| Cleveland | — | — | North Adams | 3 | 2 |
| Buffalo | — | — | Northampton | 6 | 0 |
| Pittsburg | — | — | Beverly | 7 | 2 |
| Cincinnati | — | — | Revere | 4 | — |
| Milwaukee | — | — | Leominster | 5 | — |
| Washington | — | — | Attleboro | 5 | 3 |
| Providence | — | — | Westfield | 3 | — |
| Boston | 213 | 60 | Peabody | — | — |
| Worcester | 39 | 8 | Melrose | 1 | — |
| Fall River | 38 | 17 | Hyde Park | 5 | 1 |
| Lowell | 25 | 6 | Woburn | 2 | 0 |
| Cambridge | 27 | 5 | Newburyport | 5 | 2 |
| New Bedford | 26 | 9 | Gardner | 2 | 1 |
| Lynn | 17 | 6 | Marlboro | 3 | 0 |
| Springfield | 27 | 7 | Clinton | 3 | — |
| Lawrence | 18 | 9 | Milford | — | — |
| Somerville | — | — | Adams | — | — |
| Holyoke | 13 | 2 | Framingham | — | — |
| Brockton | 10 | 0 | Weymouth | — | — |
| Malden | 9 | — | Watertown | 0 | — |
| Haverhill | 6 | — | Southbridge | 0 | — |
| Salem | 14 | 5 | Plymouth | — | — |
| Newton | 8 | 4 | Webster | 1 | 0 |
| Fitchburg | 5 | 1 | Methuen | — | — |
| Taunton | 7 | 2 | Wakefield | — | — |
| Everett | 7 | 1 | Arlington | — | — |
| Quincy | — | — | Greenfield | 6 | 2 |
| Chelsea | 4 | 0 | Winthrop | — | — |
| Pittsfield | 14 | — | | | |

## SOCIETY NOTICE.

NATIONAL ASSOCIATION FOR THE STUDY OF EPILEPSY AND THE CARE AND TREATMENT OF EPILEPTICS. — The tenth annual meeting will be held in the rooms of the St. Louis Medical Society, St. Louis, Mo., June 16, 1911.

## RECENT DEATHS.

KELLEY, DANIEL JOSEPH, M.D., M.M.S.S., died in Worcester, June 10, 1911 aged fifty-two years.

DR. DANIEL M. DILL, of Newark, N. J., died on June 9, after a long illness. He was seventy years of age, and was graduated from the University of Michigan in 1867. For ten years he was superintendent of the Essex County Hospital for the Insane.

DR. EDWARD BURNETT VOORHEES, director of the New Jersey Agricultural Experiment Station at New Brunswick, and also professor of agriculture in Rutgers College, died from cerebral apoplexy on June 6. He was well known as an authority on milk supply and livestock, and was president of the Livestock Commission of New Jersey.

DR. JOSEPH PRICE, who died of appendicitis last week at Philadelphia, was born in Virginia in 1853. He had been prominent as a gynecologic surgeon and was one of the founders of the Gynecean Hospital in Philadelphia. He was a former president of the American Medical Association, of the American Association of Gynecologists, and of the American Society of Obstetricians, and contributed many articles to current medical publications.

DR. WILLIAM H. BERTRAM, who died last week of cerebral hemorrhage while visiting a patient in East Boston, was born in East Boston in 1849. He graduated from the College of Physicians and Surgeons, Boston, in 1891, and from the Tufts Medical School in 1895, since which time he has practiced his profession in East Boston. He was a member of the Eclectic Medical Society.

DR. FRANCIS M. CRAIGIN, who died of heart-disease last week at Norwood, Mass., was born in 1833. He received the degree of M.D. in 1860 from the Hahnemann Medical College, Philadelphia.

DR. JOHN LOUIS FORTIER, who died last week at Waterville, Me., was born at St. Sylvester, P. Q., Canada, on March 29, 1853. He moved to Waterville in 1880, and in 1883 received the degree of M.D. from the Humbolt Medical School at Brunswick, Me. Since this time he had practiced medicine in Waterville, where he was city physician for a number of years.

## Original Articles.

# THE RESULTS OF THE TREATMENT OF TWO THOUSAND CASES OF MISCARRIAGE AT THE BOSTON CITY HOSPITAL.

BY ERNEST BOYEN YOUNG, M.D.,

*Instructor in Gynecology, Harvard Medical School; First Assistant Visiting Surgeon for Diseases of Women, Boston City Hospital;*

AND

JOHN T. WILLIAMS, M.D., BOSTON.

As might be expected from the frequency of miscarriage, the literature upon the subject is voluminous, but consists largely of opinions expressed by various writers without giving statistics to support their views. The series of miscarriages upon which this article is based took place before the seventh month. The patients came from the same walk in life, and were not, for the most part, selected for hospital treatment because of complications, but most frequently because of unsuitable surroundings at home. Included with those in which miscarriage took place from natural causes are many in which pregnancy was interrupted by artificial means. Thus the tables represent a review of the incidence of miscarriage, its complications and the results of the treatment of these various classes of cases through a series of years.

In the early months, before the decidua reflexa has fused with the decidua vera, the fetus has been most frequently lost, the decidual lining of the uterus remaining to be cast off in small pieces, and but very rarely in our experience has the decidual lining of the uterus separated at the same time, or the ovum, shaggy with its chorionic villi, been expelled intact. Occasionally, at from two to three months an ovum has been expelled entire; but although by the processes of nature the fetus has, in most instances been cast off, we have found a tendency to retention of the secundines, which progressively decreases, however, with the duration of pregnancy.

It is the aim of the writers to publish the results in a large series of cases treated by fairly uniform methods, that the treatment employed and its results may be compared with those of others. According to the experience of the writers, no accident receives in the long run such poor attention either from patient or physician as miscarriage, and at the same time there are few common accidents which possess such possibilities as a cause of future invalidism.

The statistics show that very little advantage is attached to any particular method of emptying the uterus, but strict asepsis from the start and the avoidance of unnecessary traumatism must always play an important part in the end results. Too often the physician examines a patient without surgical cleanliness to learn whether a miscarriage is in progress, employing aseptic precautions only when it becomes necessary to empty the uterus. Thus the first examination may be the cause of sepsis in a miscarriage which would have otherwise proceeded to a normal convalescence.

Traumatism in emptying the uterus, especially in septic cases, is often insufficiently guarded against, as the extraction of even a small fetus through an imperfectly dilated os may cause tears almost as serious as at full term. It is the opinion of the writers that, even at the risk of some delay, a rigid contracted os is often better treated by a pack or bag rather than to risk the traumatism of the steel dilators. While the finger should always be used if possible, our results show that by a careful use of the dull curette in pulling out the retained placenta less harm is apt to come than from forcible dilatation to admit the finger.

One more point deserves especial mention — the avoidance of excessive loss of blood. Sepsis is more common after profuse hemorrhage, and in all women suffering severely from loss of blood it has been our practice to use the vaginal pack and defer operative procedure until the circulation has become readjusted. Among all the cases which have entered the hospital uninfected and reasonably early in the progress of the miscarriage, there has been but one death, the result of pulmonary embolism.

We shall not attempt a general review of the literature, which has already been made by Stowe,[1] but shall quote only from those papers which have contained statistics on the results of treatment, and not refer to those merely expressing opinions without giving evidence to support them.

Stowe [1] reviewed 750 cases from the Out-Door Department of the Chicago Lying-In Hospital. These were exclusive of profoundly septic patients, who were transferred to a general hospital. Of 411 cases, which could be included as inevitable or incomplete miscarriages according to our classification, 67 terminated spontaneously; 101 were cleaned out with the finger alone; 26 with finger and curette; 198 with curette alone, and 19 with placental forceps. In his entire series of 750 cases there were no deaths. Forty-two patients ran a temperature rising above 100.5 during the convalescence.

Magrier [2] reported 275 miscarriages, of which 176 terminated spontaneously and 99 by operation. One of the former was profoundly septic and died; the rest recovered. Of the latter, 55 were cleaned out with the finger and 44 with the curette. There were 6 deaths; 2 from perforation, 1 from salpingitis and 3 (all profoundly septic from the start) from general infection. He does not state whether the fatal cases were emptied with the finger or curette. Presumably those dying from perforation were curetted, and the 3 from general sepsis would have died under any method of treatment.

Fischer [3] reported 134 miscarriages, including 32 complete and 102 incomplete. Of the latter, 3 completed the miscarriage without interference, 69 were curetted and 30 cleaned out with the finger. All the cases made afebrile convalescences, although 13 had a temperature of 39.5° C. or over before delivery.

Lantos [4] reported 300 cases of miscarriage;

250 acute (all emptied by the finger except 4 with placental forceps) and 50 chronic cases (all curetted). Of the 246 acute cases cleaned out with the finger there were 211 clean cases with no deaths, but 2 instances of cellulitis. Of the 35 infected cases, there was one death from sepsis, and one case of pelvic peritonitis with recovery.

Hauff[5] in 275 miscarriages had 97 complete and 175 incomplete. Of the former, 2 developed parametritis, 1 pleurisy, and all recovered. The incomplete cases were all emptied with the finger except 13 (6 with finger and curette and 7 with placental forceps). There were 2 deaths from septicemia, and one patient developed parametritis but recovered.

Jacub[6] reported 53 miscarriages, in which 13 completed themselves spontaneously, and 40 were cleaned out with the finger. Of the latter, 4 cases were infected and 36 clean. One of each ran an elevated temperature during convalescence but recovered.

Franz[7] treated 709 out of 844 cases by curettage. He had one death from infection. Twenty-four cases had fever during the convalescence; one from advanced phthisis, one from parametritis, and the rest presumably from intra-uterine sepsis.

D'Erchia[8] reported 41 cases of incomplete miscarriage, all treated by curettage. There were no deaths and but 4 febrile convalescences; one due to lobar pneumonia, one to septic endometritis, and one to bilateral salpingitis.

Beuttner,[9] in 40 miscarriages, used the curette alone 27, the finger and curette eleven times, and the finger alone twice. Two of the first group which were infected on admission ran some elevation of temperature during convalescence. All of the 40 cases recovered.

The writers have analyzed the records of 2,000 consecutive patients admitted to the Gynecological Service of the Boston City Hospital for miscarriage or its complications. These extended over a period of thirteen years from 1896 to 1910. We have not included threatened miscarriages which quieted down under treatment. We have classified the various cases under six headings: Complete, incomplete, infected beginning and inevitable miscarriages, and infections following and subinvolution after miscarriage.

Under complete miscarriages are classed those in which the uterus had emptied itself spontaneously of its entire contents before the patient entered the hospitals; under incomplete, those in which the fetus had been expelled but all or part of the placenta and membranes still remained in utero; under infected beginning miscarriages, those in which nothing had yet been thrown off by the uterus but the presence of infection made it dangerous to attempt to save the pregnancy; and under inevitable, those in which the entire ovum still remained in utero, but in which the extent of dilatation or the amount of hemorrhage made it impossible to prevent miscarriage. Under infections following miscarriage are included those cases admitted with well-marked septic conditions already present which were the immediate reason for entering the hospital. Under subinvolution are included all cases where flowing had continued for one month or longer, but in which the uterus, although enlarged, was found empty when curetted.

The result of this classification in the 2,000 cases was as follows:

| | |
|---|---|
| Complete miscarriages, | 199 |
| Incomplete miscarriages, | 1,333 |
| Infected beginning miscarriages, | 111 |
| Inevitable miscarriages, | 151 |
| Infections following miscarriages, | 135 |
| Subinvolution following miscarriage, | 71 |

The first thing to be considered in the treatment of miscarriage is the ability of the uterus to empty itself spontaneously. Excluding the cases in which infection determined the necessity for interference there are 1,683 in which to study this point. These cases were interfered with only when nature failed to empty the uterus or the loss of blood became so great as to endanger the patient's life.

| Period of pregnancy. | Total number. | Completed spontaneously. Number. | Per cent. |
|---|---|---|---|
| One month to eight weeks, | 233 | 35 | 10.1 |
| Two months, | 565 | 63 | 11.1 |
| Three months, | 536 | 70 | 13.0 |
| Four months, | 214 | 28 | 13.0 |
| Five months, | 85 | 14 | 16.4 |
| Six months, | 50 | 13 | 26.0 |
| Total, | 1,683 | 223 | Average, 13.2% |

From the foregoing table it will be seen, first, that about 13.2% of all miscarriages may be expected to complete themselves spontaneously; and, second, that the likelihood of a miscarriage to be completed without interference increases in direct proportion to the duration of pregnancy. This is somewhat contrary to the common statement that before the placenta is developed the ovum is likely to be thrown off intact. It is undoubtedly true that such an occurrence takes place in a large number of cases which never seek surgical treatment, but it is nevertheless true that it has been distinctly rare in our experience at the hospital to find an intact ovum expelled.

With few exceptions the cases were all treated according to the following methods. Miscarriages which had completed themselves spontaneously before admission were treated expectantly, the uterus being entered only if signs of infection appeared. In incomplete miscarriages during the fifth to eighth weeks of pregnancy the uterus was cleaned out with a large dull curette, dilating the cervix if necessary with branched dilators sufficiently to admit the passage of the curette. The placental tissue was "raked" out carefully until the uterus seemed to be empty and then the walls lightly gone over with a sharp curette. Later in pregnancy the cervix was dilated with the steel dilators if necessary and the finger introduced. The uterine contents were removed as far as possible with the finger, and the process then completed with the dull curette.

Inevitable and septic beginning miscarriages

were allowed to complete themselves spontaneously when possible. When interference became necessary, the same rules were followed as in incomplete except that in these cases dilatation of the cervix often presented much difficulty. When the cervix was extremely rigid a tight vaginal pack was introduced and left for twenty-four hours before attempting to empty the uterus. In many cases even as late as the third and fourth months dilation of the cervix to a size sufficient to admit the finger was so difficult and dangerous that the attempt was given up and the fetus and placenta both removed piecemeal with the clamp and curette as a much safer procedure.

Packing the cervix and vagina to promote expulsion of the uterine contents was tried only thirty-four times. It was successful without other treatment eight times in 26 inevitable miscarriages, but was used eight times without success in incomplete miscarriages. While it is thus seen that packing is an often unsuccessful method of emptying the uterus, it has two very distinct and valuable uses. The first of these is to soften a rigid cervix as a preliminary to dilatation and curettage. The other is in patients exsanguinated from hemorrhage; to control the bleeding and allow them to rally from the initial loss of blood before emptying the uterus. Five women who were practically pulseless on admission were treated in this way and recovered.

The cases admitted for infections following miscarriage were treated by measures appropriate to the conditions present. Those of subinvolution were, with few exceptions, curetted.

All cases having a temperature of 100.5° F. or over on admission are considered to be infected; and the same temperature, persisting for twenty-four hours or longer taken as a standard of morbidity in the convalescences. The total results of treatment are as follows: The cases without elevation of temperature at entrance numbered 1,331. Excluding two patients moribund on admission from hemorrhage and dying within one hour, and one death from alcoholism to which the miscarriage had no contributing influence, there was only one death, from pulmonary embolism on the second day. The mortality of clean cases was, therefore, 7-100 of 1%, the mortality from sepsis being 0.

Excluding the cases admitted primarily for infections following miscarriage, there were 523 infected cases. Among these there were 6 deaths; 3 developing diffuse peritonitis, one pyemia, one septicemia, and one dying from pulmonary embolism. The mortality of infected cases subjected to treatment fairly early was, therefore, only 1 6-100%. The cases admitted for infections following miscarriage will be taken up later.

The following figures show the liability of miscarriages at the various months to become infected, and the influence of the duration of pregnancy and size of the uterus upon the mortality. The first table shows the number of cases without temperature and with temperature entering the hospital; and the number of each having septic convalescences.

| Period of pregnancy. | Total number. | Cases without temperature on admission. | | Cases with temperature of 100.5 or over on admission. | |
|---|---|---|---|---|---|
| | | Number cases. | No. septic convalescences. | Number cases. | No. septic convalescences. |
| One month to eight weeks, | 279 | 177 | 1 | 102 | 31 |
| Two months, | 651 | 435 | 11 | 216 | 52 |
| Three months, | 635 | 431 | 26 | 204 | 70 |
| Four months, | 256 | 183 | 22 | 73 | 25 |
| Five months, | 110 | 65 | 4 | 45 | 16 |
| Six months, | 69 | 51 | 4 | 18 | 12 |
| Total, | 2,000 | 1,342 | 68 | 658 | 206 |

The second table shows the percentages of the total number of miscarriages, by months, which became infected, which made septic convalescences, and in which death from sepsis occurred.

| Period of pregnancy. | Percentage with temperature 100.5 or over at entrance. | Percentage septic convalescence. | Percentage mortality. |
|---|---|---|---|
| One month to eight weeks, | 36.5 | 11.4 | 3.5 |
| Two months, | 33.1 | 9.6 | 3.5 |
| Three months, | 32.1 | 15.1 | 3.4 |
| Four months, | 28.5 | 18.0 | 3.1 |
| Five months, | 40.9 | 18.1 | 3.6 |
| Six months, | 26.0 | 23.1 | 7.1 |

From the foregoing tables it is seen that there is:

(1) decreasing percentage of infected cases in miscarriages at successive months.

(2) An increasing percentage of sepsis in the convalescence.

(3) A fairly constant mortality. The high mortality of the six months miscarriages was obtained in such a small number of cases that unless it can be verified at some future time in a larger series it must be disregarded as probably an accidental variation.

In the following tables the writers set forth the results of treatment in miscarriages entering the hospital at different stages.

| | | |
|---|---|---|
| Complete miscarriages, | | 199 |
| Cases without elevation of temperature on admission, | | 159 |
| With afebrile convalescence, | 156 | |
| With transient rise of temperature, not over twenty-four hours' duration, | 1 | |
| With septic convalescence, | 2 | |
| Case with temperature of 100.5 or over on admission, | | 40 |

| | | |
|---|---|---|
| With temperature normal within forty-eight hours, | 27 | |
| Temperature normal in forty-eight hours to one week, | 6 | |
| Septic convalescence, | 6 | |
| Temperature due to outside causes: | | |
| Pulmonary tuberculosis, | 1 | |
| Incomplete miscarriages, | | 1,333 |
| Cases without elevation of temperature on admission, | | 952 |
| Afebrile convalescence | 866 | |
| Transient rise of temperature, not over twenty-four hours' duration, | 35 | |
| Septic convalescence, | 51 | |
| Cases with temperature of 100.5 or over on admission, | | 381 |
| Temperature normal within forty-eight hours, | 289 | |
| Temperature normal within forty-eight hours to one week, | 37 | |
| Septic convalescence, | 47 | |
| Temperature due to outside causes: | | |
| Lobar pneumonia, | 3 | |
| Pulmonary tuberculosis, | 2 | |
| Typhoid, | 1 | |
| Septic arm, | 2 | |
| Infected beginning miscarriages, | | 111 |
| Cases delivering themselves spontaneously, | | 19 |
| Temperature normal within forty-eight hours, | 17 | |
| Septic convalescence, | 2 | |
| Cases expelling fetus spontaneously, secundines, removed, | | 23 |
| Temperature normal within forty-eight hours, | 20 | |
| Septic convalescence, | 3 | |
| Cases in which the entire ovum was removed artificially, | | 69 |
| Temperature normal within forty-eight hours, | 46 | |
| Temperature normal in forty-eight hours to one week, | 10 | |
| Septic convalescence, | 13 | |
| Inevitable miscarriages, | | 151 |
| Cases delivering selves spontaneously after packing, | | 7 |
| Afebrile convalescence, | 5 | |
| Septic convalescence, | 2 | |
| Cases delivering selves spontaneously without interference, | | 40 |
| Afebrile convalescence, | 39 | |
| Septic convalescence, | 1 | |
| Fetus expelled spontaneously, placenta removed, | | 24 |
| Afebrile convalescence, | 21 | |
| Transient rise of temperature, not over twenty-four hours' duration, | 2 | |
| Septic convalescence, | 1 | |
| Both fetus and secundines removed artificially, | | 73 |
| Afebrile convalescence, | 63 | |
| Transient rise of temperature, not over twenty-four hours' duration, | 5 | |
| Septic convalescence, | 5 | |
| Complicated by other conditions, | | 4 |
| Typhoid, | 2 | |
| Tuberculosis, | 1 | |
| Alcoholism, | 1 | |

The table at the bottom of this page shows the incidence of the various septic conditions in the four classes of cases just tabulated.

The mortality in these cases was as follows:

| | | |
|---|---|---|
| Complete miscarriages, | | 0 |
| Incomplete miscarriages, | | 8 |
| Cases without temperature: | | |
| Hemorrhage (moribund on entrance), | 2 | |
| Pulmonary embolism, | 1 | |
| Cases with temperature over 100.5 on entrance: | | |
| Septic endometritis, acute dilatation heart, | 1 | |
| Septic endometritis, pulmonary embolism, | 1 | |
| Diffuse, peritonitis, | 3 | |
| Infected beginning miscarriages, | | 2 |
| Delivered of fetus and placenta artificially: | | |
| Septicemia, | 1 | |
| Pyemia, | 1 | |
| Inevitable miscarriages, | | 0 |

These figures speak for themselves. The greatest morbidity and mortality was found in the incomplete and infected beginning miscarriages as would be expected, since they were the most difficult cases; but even on these when the patients arrived at the hospital early, the results were extremely good. As our cases were practically all cleaned out by the same method, we cannot in this series draw any comparison between the different methods of artificially emptying the uterus. We shall have, however, the opportunity to compare the results of interference with those of spontaneous emptying of the uterus in the table on the following page. These figures and percentages include only the cases with a temperature of 100.5 or over on entrance.

From the above it would appear that the important thing in an infected case is to empty the uterus. The method makes no difference. That the results of interference are no better than of spontaneous completion of the miscarriage does not appear to be a reproach to our methods, for we interfere only when nature fails. On the contrary, it is gratifying that the artificial

| | Septic endometritis. | Pelvic cellulitis. | Pelvic abscess. | Salpingitis. | Diffuse peritonitis. | Multiple arthritis. | Phlebitis. | Cellulitis and phlebitis. | Septic endometritis, pulmonary embolism. | Gonorrhea. | Sloughing fibroid. | Septicemia. | Pyemia. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Complete: | | | | | | | | | | | | | |
| Without temperature, | 2 | | | | | | | | | | | | |
| With temperature 100.5 or over, | 3 | 2 | | 1 | | | | | | | | | |
| Incomplete: | | | | | | | | | | | | | |
| Without temperature, | 38 | 5 | | 5 | | | | | | 2 | 1 | | |
| With temperature 100.5 or over, | 9 | 15 | 1 | 12 | 4 | 3 | 1 | 1 | 1 | | | | |
| Infected beginning, | 13 | 1 | | 1 | | | 1 | | | | | 1 | 1 |
| Inevitable, | 5 | | | 2 | | | 1 | | | | 1 | | |
| | 70 | 23 | 1 | 21 | 4 | 3 | 3 | 1 | 1 | 2 | 2 | 1 | 1 |

| | Total number. | Temperature normal within forty-eight hours. | Temperature normal in two days to one week. | Septic convalescence. |
|---|---|---|---|---|
| In numbers: | | | | |
| Uterus emptied spontaneously, | 58 | 44 | 6 | 8 |
| Uterus emptied artificially, | 465 | 355 | 47 | 63 |
| In percentages: | | | | |
| Uterus emptied spontaneously, | – | 75.8 | 10.3 | 13.8 |
| Uterus emptied artificially, | – | 76.3 | 10.1 | 13.5 |

results have been as good as where the entire process has been completed naturally.

Seventy-one patients were treated for subinvolution following a miscarriage. Of 16 cases at one month to eight weeks; 26 at two months; 19 at three months; 6 at four months and 2 each at five and six months. Practically all were curetted with relief.

Space will not permit a detailed discussion of the treatment of infections following miscarriage. At entrance, all cases without evidences of inflammatory process in the Fallopian tubes or broad ligaments were given an intra-uterine douche. Fresh air, forced feeding and stimulation formed an important part of the routine treatment. Vaccines and antistreptococcic serum were also tried out. When pus was present in the broad ligament or peritoneal cavity it was evacuated by the nearest route. In a later paper the writers hope to consider the treatment of septic cases in greater detail.

The pathological lesions present in these cases and their mortality is shown in the following table.

| Condition present. | Number Cases. | Number deaths. |
|---|---|---|
| General septicemia without local suppuration, | 46 | 46 |
| General septicemia with septic pneumonia, | 4 | 2 |
| General septicemia with phlebitis, | 1 | 1 |
| General septicemia with phlebitis, cellulitis, arthritis, | 2 | 0 |
| General septicemia with cellulitis and arthritis, | 1 | 1 |
| General septicemia with subcutaneous abscess, | 3 | 2 |
| General septicemia with secondary hemorrhage, from sloughing endometrium, | 1 | 1 |
| Diffuse peritonitis, | 12 | 11 |
| Salpingitis, | 12 | 0 |
| Septic endometritis, | 26 | 1 |
| Pelvic cellulitis, | 16 | 0 |
| Pelvic cellulitis, and phlebitis, | 1 | 0 |
| Pelvic abscess, | 9 | 3 |
| Phlebitis, | 1 | 0 |
| Total, | 135 | 68 |

Finally, a word as to the self-induced and criminal abortions. Whatever one's moral attitude toward these procedures, their danger is evident. Out of 2,000 cases, 55 admitted the use of drugs, 262 self-induction by instrumentation, and 147 criminal abortion. Of the self-induced, 56.4%, and of the criminal, 50%, were infected. Of the former, 14.9%, and of the latter, 25.8%, made septic convalescences. The mortality of the self-induced cases was 5.7%, and of the criminal abortion 10.2%.

A wide variety of implements were used, the most common being the soft rubber catheter. The most deadly was the douche nozzle, which, probably infected by previous use in an unclean vagina, was employed thirty-three times with 15% mortality. Other implements which served to produce abortion were the uterine sound and curette, knitting needle, penholder, lead pencil, bougie, umbrella point, slippery-elm stick, wire, hatpin, tree twig and the finger.

Space has necessitated presenting these statistics very briefly, but it is our belief that the inferences drawn from them are correct. While there are undoubtedly many cases of miscarriage which do perfectly well without surgical treatment, the writers believe that the cases included in this series were representative ones. The almost uniformly satisfactory results obtained in the cases received early and the number of previously untreated, or poorly treated, cases which arrived at the hospital late in the miscarriage and hopelessly septic, lead us to recommend the application of the surgical principles of rest and asepsis to every case and interference when it becomes indicated. The writers believe that the following conclusions are justified.

## CONCLUSIONS.

1. Spontaneous emptying of the uterus takes place in but about 13.2% of all miscarr ages.

2. The likelihood of a miscarriage to complete itself increases with the duration of pregnancy.

3. When it becomes necessary to use artificial means to complete the miscarriage, the finger followed by the curette in later miscarriages, and of the curette alone in the earlier months of pregnancy has given uniformly satisfactory results at the Boston City Hospital.

4 Experience has shown that where the cervix is extremely rigid it is better to introduce the curette and break up the fetus and placenta and remove them piecemeal than to attempt to dilate the cervix sufficiently to introduce the finger.

5. Packing the vagina and lower segment of the uterus is an unsatisfactory and often unsuccessful method of emptying the uterus. No success whatever was obtained in treating incomplete miscarriages in this way.

6. Packing is, however, of great value in two classes of cases.

First, in exsanguinated patients, to stop the hemorrhage and give the woman a chance to recover somewhat from the loss of blood before emptying the uterus.

Second, when the cervix is very rigid, a tight cervical pack for twenty-four hours will soften it so that dilatation may be attempted with safety.

7. The results of artificial methods are as good, but not better than where nature has succeeded in emptying the uterus.

8. Artificial methods are necessary in a majority of cases, however, simply because nature has failed.

9. In infected cases the essential thing is to get rid of the infectious material by emptying the uterus; the particular method employed making little difference.

10. The later in pregnancy miscarriage occurs the smaller the liability to become infected, but the greater the likelihood of developing grave septic complications if infection does take place.

11. The mortality is practically the same at all periods of pregnancy.

12. Induced abortions have a greater mortality than accidental. The mortality of patients admitted to the hospital after criminal abortions was 10%.

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## FURTHER EXPERIENCE WITH THE BENZIDIN TEST FOR OCCULT BLOOD IN DISEASES OF THE DIGESTIVE ORGANS.*

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THE subject of tests for blood in gastric contents and feces needs no introduction. We have all used them and know their value. The only question is which test to use and how to interpret results.

I reported my early experience with the benzidin test over a year ago.[1] I felt then that it had some advantages over the guaiac test. The technic was simpler, the results clearer and the somewhat greater delicacy was an advantage in detecting traces of blood in different types of ulceration.

The benzidin test has been used widely since then and additional favorable reports have appeared by Schumm, Citron, Clark, Walter, Merkel, McWeeny and others.

*Delicacy.* — Like all recent tests for blood, the delicacy varies greatly according to the technic used, and the literature of the subject is confusing because these tests are now being used for medico-legal as well as clinical work. In medico-legal work the greatest possible delicacy is desired; in clinical work this is not the case.

The original benzidin test is far too delicate for clinical work. Schumm's modification of the guaiac test is not only too elaborate, but also too delicate. These tests give positive results in feces for three or four or more days after eating a single piece of meat. They are confusing. We must choose a less delicate technic.

*We must not go too far in the other direction.* The Weber guaiac test commonly used is a rather rough test and often does not detect blood when it is present.

If the stools of a healthy person eating meat once or twice a day are examined by the ordinary Weber guaiac test, we get a negative result two thirds of the time. It is easy to understand why a test which frequently gives negative results when ¼ to ½ lb. of meat is eaten, will frequently leave us in the lurch in peptic ulcer and cancer.

The largest series of tests of stomach contents I have seen reported where the guaiac test was used were by Graham and Guthrie, of the Mayo's clinic. These cases were all serious chronic ulcerative ones which came to operation.

Statistics are given in 150 cases of cancer of the stomach. This group was not composed of early cases. The symptoms had lasted over a year, more than one half the cases had palpable tumor and nearly one half had marked pyloric obstruction.

Figures are given in 250 cases of chronic peptic ulcer. (Probably more than one half of these were *duodenal* ulcer which helps explain the low per cent. of cases with blood in the stomach contents.)

In 150 cases of cancer of the stomach, blood was present in 80 cases, or 53%.

In 250 cases of chronic peptic ulcer, blood was present in 49 cases, or 20%.

Their experience seems to justify their conclusion that "three fourths of all ulcers must be diagnosticated without blood findings," (with the guaiac test).

I think such results with meat diet and with chronic ulceration show that the guaiac test is not delicate enough for our work. Some one may object that the guaiac test might be delicate because it shows 1 part of blood in 8,000 of water, but we must remember that the delicacy of the guaiac test and of all the recent blood tests is greatly reduced by the presence of organic material such as occur in stomach contents and feces. The guaiac test, for example, will only show 1 part of blood in 200 to 500 in feces.

We want a happy medium between the rather rough guaiac test and the over-sensitive original benzidin test, and I believe this is found in Schlesinger and Holtz modification of the benzidin test.

In my first year's work with the benzidin test I used the guaiac test constantly to control results. In the last year I have used the benzidin test alone for all routine work.

*Technic.* — The Schlesinger and Holtz method reduces the delicacy of the original Adler benzidin test by using a small amount (2 to 3 drops) of the material for examination, and excludes oxidizing ferments as a source of error by boiling. The technic is as follows:

The material for examination consists of simple gastric contents; or of a pea-sized piece of feces thoroughly stirred in a test tube into about 4 ccm. of water. This is brought to a boil to destroy oxidizing ferments. Ten drops of a fresh solution of benzidin (prepared by shaking a knife-tip of benzidin in about 2 ccm. of glacial

* Read at the fourteenth annual meeting of the American Gastro-Enterological Association, Philadelphia, April 19, 1911.

[1] A Comparison of the Guaiac and Benzidin Tests for Invisible Hemorrhage in Diseases of the Digestive Organs. BOSTON MED. AND SURG. JOUR., 1909, clx, pp. 733-743.

acetic acid) is added to 3 ccm. of a 3% (ordinary commercial solution) of hydrogen peroxide in a test tube. This mixture serves as a control of the cleanliness of reagents and glassware.

To make the test, add 2 or 3 drops of the boiled gastric contents or of the feces mixture to the peroxide benzidin mixture. A clear green or blue color appears within a minute or two when blood is present. I have added the drops of material to be examined without shaking the mixture, in which case a deep ring of color develops only at the top. This gives a sharper result when little blood is present.

The method is simple and rapid and easily learned. It can be performed within five minutes. With pure reagents the results are uniform and reliable. The color changes are clear and sharp even in feces, because very little fecal pigment is present to interfere. The ether extraction of the guaiac test is replaced by the simple quick method of boiling.

It is best to use only pure reagents of best quality and to avoid peroxide solutions containing acetanelid as a preservative. I use dioxygen. The glassware must be scrupulously clean. It is unnecessary to neutralize the reaction of gastric contents or feces.

It is very rare to find feces which give a positive reaction (due to oxidizing ferments or drugs) in the absence of blood, and it saves time to examine feces as a routine without boiling and only boil if the unboiled specimen is positive.

*Precautions.* — The usual precautions about food were taken. Foods containing hemoglobin (meat, fish and their juices) were excluded from the diet for two days where the feces were tested. Where the stomach contents were examined after a test breakfast, no previous exclusion of meat, etc., was needed except in cases of marked pyloric stenosis.

With reference to drugs, hemoglobin preparations, iodides and salts of iron were omitted during the tests.

*Clinical Results.* — The cases quoted are almost all private cases, and the examinations were all made either by the author or under his immediate supervision. Only those cases are included in which the diagnosis was practically certain from long clinical observation, or as the result of operation or autopsy.

Two hospital cases in which tests were made by the author were excluded because of a reasonable doubt about the use of a meat and fish-free diet. They were unintelligent Italian laborers.

In the previous series 334 examinations were made in 126 cases. To this we now add 608 examinations in 164 cases, making a total of 942 examinations in 290 cases. We shall present all the cases in one group since the technic of the test and the precautions observed were identical in both series.

I have tabulated the results as simply as possible, dividing the cases into ulcerative and non-ulcerative. For convenience, healthy persons on a meat diet, and hepatic cirrhosis are put with the ulcerative cases, and healthy persons on a blood-free diet, with non-ulcerative cases. I will not discuss the results in detail in different diseases, but simply emphasize a few important points.

The uniform negative results in the 273 examinations of feces in the 217 non-ulcerative cases show that this modification of the benzidin test cannot be charged with being too delicate for clinical work. Misleading positive results are absent. In about one fifth of the stomach contents in these cases a minute trace of blood results from the use of the tube. This is about equally true with the guaiac test and seems unavoidable.

Blood was found in *every examination* of the feces of healthy persons on a meat diet.

Blood was found in *all but two* cases of chronic peptic ulcer.

Blood was found in *every examination in every case of cancer* of the stomach or bowel examined. These are clearer, more uniform results than I have seen reported with the guaiac test, or that I have been able to get with it myself. The contrast between ulcerative and non-ulcerative cases is sharper. *In my opinion they show that the benzidin test has more value than any other blood test in detecting chronic ulceration in the digestive tract.*

We know that the benzidin test is far more reliable in detecting traces of blood from the food in the feces of healthy persons, and it is natural to find it is also more reliable in detecting traces of blood from an ulcerated surface.

Chronic peptic ulcers are characterized by intermittent bleeding, and we see from the table that about one half of the specimens of feces and gastric contents examined in these cases were negative, but it is not surprising that some positive results were obtained in almost every case when we consider that the patients were almost without exception referred to me at a time when they were at their worst, when the ulcers were most irritated or inflamed and most likely to bleed.

The only case classed as chronic gastric ulcer which gave only negative blood tests was a patient who was examined at a time of pain and distress of one week's duration a year after a gastro-enterostomy had been performed. The patient was entirely well for months before and after this brief attack, and it is more than doubtful whether an open ulcer was present at the time of examination.

The only duodenal ulcer which gave only negative blood tests was a patient who gave a long history of acute attacks with complete intermissions of several months between. He was not seen in the active stage, but at a time when there had been no symptoms for a month, and unfortunately only one examination of feces could be made. An operation three months later showed a chronic ulcer.

In these cases of chronic peptic ulcer the delicacy of the benzidin test was very useful in diagnosis. I have seen a few indurated ulcers which gave only negative results with the guaiac test,

but I believe this much less likely to happen with the benzidin test. Thus far I have not seen a single case where uniformly negative tests with benzidin were followed immediately by the disclosure of an open chronic ulcer at operation. (We must never be content with a single examination of feces or gastric contents in chronic peptic ulcer.)

I realize that my statistics on the benzidin test for blood in chronic peptic ulcer will be more valuable when the series is larger. I should like to see the benzidin test given a thorough trial in some of the surgical clinics where large numbers of these cases are annually operated upon.

In cases of acute ulcer the feces were usually examined till three consecutive negative results were obtained. The feces usually became negative for blood in acute cases with hematemesis in about ten days after hospital treatment was begun.

In one case of benign stenosis of the pylorus, the three positive results in the gastric contents were due to the meat remaining from previous meals. In the other the two positive results probably came from erosions caused by the irritation of the stagnating food.

The cancers of the bowel were distributed as follows: one of the jejunum, one of hepatic flexure, one of the splenic flexure, and one of the sigmoid. General experience has shown that with the guaiac test, positive results have been less constant and frequent in cancer of the bowel than in cancer of the stomach. Our experience with the benzidin test in these few cases of cancer of the bowel has given equally constant positive results.

The invariable positive results in cancer need a word of explanation. They are probably due to the fact that all these cases were seen in consultation and unfortunately were well developed when I first examined them. In 9 of these cases the diagnosis was obvious from the history, tumor, pyloric obstruction and loss of weight. It is grossly unfair to the test, however, to say that it only appears when other signs are unmistakable. Positive results probably are obtained as soon as ulceration begins, which is usually early in gastro-intestinal cancer. Fully one half of these cases were doubtful latent ones without either tumor, obstruction or marked loss of weight, and the constant presence of occult blood was very valuable in diagnosis.

On the other hand, we may fairly conclude from these results that if a patient suspected of cancer has had time to develop an ulcerated lesion, and repeated examination with the benzidin test gives only negative results, this is strong (but not absolute) evidence against the presence of cancer. I have seen many such cases in the past few years.

The positive results in cirrhosis have little or no diagnostic value and may be misleading.

*The Phenolphtalein Test.* — I should like to say a few words about the phenolphtalein test for blood, though I have used it only a short time.

I was kept from trying it by early reports of French authors who found it extremely delicate, much more than the original benzidin test, giving a positive reaction with one part of blood in one or two millions in watery solutions, and said to show the presence of even *congestion* of the mucous membranes.

Since Boas' paper was published in January, 1911, recommending the test and placing it midway between the guaiac and benzidin tests in delicacy, I have given it a trial.

The reagent is simply made by dissolving 1 or 2 gm. of phenolphtalein and 25 gm. of potassium hydroxide in 100 ccm. of water and heating gently till decolorized in the presence of 10 gm. of powdered zinc. The solution is permanent.

The test is made by adding 2 ccm. of gastric contents or feces and water, previously boiled and *cooled*, to 1 ccm. of the reagent and a few drops of hydrogen peroxide. A prompt red or pink color is positive.

The sources of error in general are the same as for the benzidin test and similarly excluded by diet and boiling. ***Heat alone will give a positive test and must be avoided.***

My short experience has shown that the test is *less* delicate than the benzidin test, and *more* delicate than the guaiac test, if approximately the same technic is used for all, — but a comparison of the usual phenolphtalein test (using 2 ccm. of material to be examined and 1 ccm. of reagent) with the Schlesinger and Holtz modification of the benzidin test shows that they are much alike in delicacy. The phenolphtalein test is a little more delicate for blood in watery solutions and in gastric contents, and almost exactly the same for blood in feces. As in the benzidin test, the presence of organic material (feces, gastric contents) greatly reduces its delicacy.

It seems to be a good test, simple and clear, but I can see no advantage over the benzidin test; the slight advantage of having a permanent solution of the phenolphtalein reagent is counterbalanced by other slight disadvantages, such as the necessity for cooling the material for examination after heating, etc. I must use the test more before giving a final opinion.

Boas advises making an ether extract of the material to be examined instead of boiling it, to exclude sources of error such as oxidizing ferments. This is a step backward; boiling answers the purpose, is simpler and shorter and is to be preferred.

In conclusion, I do not wish to exaggerate the importance of blood examinations. Nothing could be worse than to jump at conclusions in a case from a few blood tests. I always look with the greatest care for all other signs and symptoms of ulceration.

We all realize the difficulties of interpretation of results. We know that benign cases with blood in the stomach are not always ulcer, and that negative results do not always exclude chronic ulcer. We realize that there is an early stage in every cancer that is non-ulcerative, and that scirrhous cancer may ulcerate late.

Piles and other rectal diseases are a great nuisance, at times preventing the use of blood tests

in the feces, but in spite of all I find that blood tests are a very great help in clinical diagnosis, and I believe that the Schlesinger and Holtz benzidin test is the best one to use, on account of its simplicity, clearness and degree of delicacy.

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NON-ULCERATIVE CASES.

| | No. of Cases. | Feces. | | | Gastric Contents. | | |
|---|---|---|---|---|---|---|---|
| | | No. Examined. | Positive. | Negative. | No. Examined. | Positive. | Negative. |
| Healthy persons: | | | | | | | |
| Meat-free diet, | 15 | 39 | | 39 | | | |
| Esophagus: | | | | | | | |
| Spasm, pouch, | 6 | 21 | | 21 | 10 | 3 | 7 |
| Stomach: | | | | | | | |
| Neuroses, | 138 | 141 | | 141 | 249 | 40 | 209 |
| Catarrh, | 10 | 15 | | 15 | 17 | 1 | 16 |
| Ptosis, | 10 | 2 | | 2 | 14 | | 14 |
| Benign pyloric stenosis, | 9 | 2 | | 2 | 26 | 5 | 21 |
| Bowel: | | | | | | | |
| Neuroses, | 7 | 15 | | 15 | 4 | | 4 |
| Chronic catarrh, adhesions, diverticulum, hernia, | 9 | 18 | | 18 | 9 | 2 | 7 |
| Liver: | | | | | | | |
| Gallstones, | 9 | 13 | | 13 | 16 | | 16 |
| Cyst, Syphilis, | 4 | 7 | | 7 | 3 | 1 | 2 |
| Total, | 217 | 273 | | 273 | 348 | 52 | 296 |

ULCERATIVE CASES.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Healthy persons: | | | | | | | |
| Meat diet, | 6 | 20 | 20 | | | | |
| Esophagus: | | | | | | | |
| Cancer, | 2 | 3 | 3 | | 2 | 2 | |
| Stomach: | | | | | | | |
| Acute ulcer, | 10 | 44 | 21 | 23 | 19 | 13 | 6 |
| Chronic ulcer, | 10 | 28 | 17 | 11 | 23 | 17 | 6 |
| Duodenal ulcer, | 6 | 12 | 8 | 4 | 16 | 6 | 10 |
| Cancer, | 22 | 37 | 37 | | 53 | 53 | |
| Bowel: | | | | | | | |
| Ulcerative colitis, | 8 | 21 | 19 | 2 | | | |
| Cancer, | 5 | 18 | 18 | | 8 | | 8 |
| Liver: | | | | | | | |
| Cirrhosis, | 4 | 9 | 6 | 3 | 8 | 6 | 2 |
| Total, | 73 | 192 | 149 | 43 | 129 | 97 | 32 |

LITERATURE.

The literature of the subject up to 1909 will be found in previous papers by the author on the "Value of Tests for Invisible Hemorrhage in Diagnosis and Treatment of Diseases of the Digestive Organs," published in the *Journal of the American Medical Association*, 1907, vol. xlviii, pp. 506–515, and "A Comparison of the Guaiac and Benzidin Tests for Invisible Hemorrhage in Diseases of the Digestive Organs," published in the BOSTON MEDICAL AND SURGICAL JOURNAL, 1909, vol. clx, pp. 733–743. These reference are chiefly to articles appearing since then.

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## ON THE RELATION BETWEEN LABORATORY WORK AND CLINICAL WORK.*

BY RICHARD C. CABOT, M.D., BOSTON.

I SHALL try first to distinguish the real differences from the fancied differences between these two classes of work; next I shall endeavor to point out what seem to me to be the proper relations between the two branches.

### I. SUPPOSED DIFFERENCES.

In almost any group of physicians who discuss the subjects that grow out of hospital work and medical teaching one hears a distinction made between the so-called laboratory branches of work and the laboratory men on the one hand, and the clinical branches and clinical men on the other. In the Harvard faculty, for instance, one constantly hears such a distinction emphasized, and there come near to being two parties within the faculty divided on these lines and voting quite consistently as groups.

1. The prevailing idea, I think, among men who use these terms is that laboratory work is *exact science*, while clinical work is rough and *inexact science;* that laboratory work is done with instruments of precision, while clinical work is done with our eyes, our fingers, our ears and other still more inaccurate instruments. Doubtless this distinction holds true in many laboratories and in much clinical work, but there is no essential reason why it should be so, and in many hospitals it is not so. For example, the measurements of weight, temperature, blood pressure, may be as exact in the wards as anywhere else. They are all clinical procedures, yet all carried out with instruments of precision. It is true further that many of the procedures ordinarily carried out in the wards could be carried out in the laboratory, and vice versa. At the Massachusetts General Hospital we have small ward laboratories in which a good deal of the work on the blood is done close at the bedside. I have seen similar work in Johns Hopkins Hospital.

A considerable amount of laboratory work concerns itself with animal experimentation, and this, I suppose, will never be carried on in the wards or be called clinical; but I do not suppose that any one wishes to limit the term "laboratory work" to animal experimentation. On the other hand, the attitude of mind and the processes of thought used in animal experimentation are frequently applied at the bedside.

2. This brings me to a second distinction sometimes present in the minds of those who divide themselves into a laboratory group and a clinical group in a college faculty or any other body which is likely to discuss these questions. I refer to the distinction between (*a*) relatively *passive observation* such as one may use as he watches the course of a fever, and (*b*) the relatively active *construction and verification of hypotheses* which (in the great majority of problems studied in the laboratory) are concerned with animal experimentation. This last type of thought and work is sometimes said to be especially characteristic of the laboratory, while the relatively passive type is identified with clinical work.

This distinction, however, like that previously referred to, seems to me fallacious. One can and constantly does make experiments on patients; in fact, every item of therapeutics is in a very real sense an experiment, and if the mind of the clinician is active he is constantly forming and testing hypotheses in this as in other parts of his work. It is true that as a group clinicians are more apt to be men of the passively observing type than are the best type of laboratory workers, but this is a distinction which has no good ground for existing and which it ought to be the endeavor of all of us who care for either branch of work to wipe out.

In the laboratory one has no work unless he sets himself some problem, thinks out some hypothesis which he wishes to verify. On the other hand, in the wards one can and many do keep busy without forming or testing out any hypotheses worthy of the name. That is only to say that for some people it is easier to go to sleep about one's work in the wards than it is in the laboratory. On the other hand, it is clear to all of us who know much of laboratories that there are considerable areas of laboratory work in which the exercise of actual intelligence approaches the zero point. I refer, of course, to the mere purely technical repetition of processes previously

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worked out by others and the verification by a long series of similar experiments of hypotheses thought out by some one else, and often of doubtful value. *The high grade type of work* in the laboratory *is the construction of fruitful hypotheses;* their verification may involve further exercise of first-class brain power in the elaboration of methods, but in practice it often does not.

Summing, up, then, the supposed but, I think, unreal differences between laboratory work and clinical work I should say that if we are talking of *good* work in both fields, we cannot differentiate them by criteria or accuracy nor by the type of mental process employed in the two fields of work. In the laboratory and at the bedside there are relatively accurate measurements carried on with instruments of precision and relatively inaccurate judgments made without instruments; in both fields we must employ the mental processes of relatively passive observation and the processes of constructing and verifying hypotheses, if we are to do good work.

## II.

Turning now to the real differences which, so far as I can see, will always exist, and ought to exist between laboratory work and clinical work, we may say that they consist essentially in this: *in the wards, as in practice of medicine outside a hospital, psychical elements are everywhere present, and are often paramount, while in the laboratory they are reduced to the minimum.* Deeply embedded in every item of the evidence which we secure when we take a patient's history in the wards, are psychical factors, psychical data, psychical judgments, psychical pressure exerted on both sides of the relation. The nature of the questions asked and their effect upon the patient's mind, the skill with which we interpret his answers, paying due regard to racial elements, to local habits of speech, to differences in age and sex, and to the patient's various prejudices, preconceptions and fears, — all these elements are essentially psychical and incapable, so far as one can see at present, of being automatically registered or exactly measured. The personality of the patient and of the physician is a factor and a variable factor in every observation and in every record.

Still more obviously is this true when one turns to the treatment of disease. Whereas in the laboratory one's constant effort is to reduce the personal factor, the personal equation, to a minimum, to remove from the field of vision all elements due to one's own personality, and to make oneself so far as possible passive before the phenomena which we are trying to record, the opposite is true of every successful clinician. He can never take the passive attitude if he is to do the best for his patient. He must always be trying to push the facts in some special direction, to interfere with the course of nature, and to make himself count. In my own work I have often felt a sort of wrench as in dealing with patients I have turned from the activities of physical diagnosis with their strenuous efforts at impartiality and passivity, to the field of active therapeutics in which one succeeds only by being partial, not impartial, by taking chances and by the presence of a contagious hopefulness.

It seems to me most important that we should recognize this as the essential difference between laboratory work and clinical work. We shall understand, then, why it is that the first-class laboratory worker or the man who in the earlier stages of his medical course shows up brilliantly in anatomy, physiology and physiological chemistry is yet often a total failure when it comes to clinical work. One may be a paragon of excellence in those fields of medicine where skill in the give and take between personalities counts for little that is, in the laboratory, and yet be unfitted for clinical work.

In clinical work a different sort of training is necessary if we are to go beyond instinct and the light of nature in the processes of human intercourse on which a considerable portion of the successful diagnosis and treatment of disease depends. Most skilful clinicians are quite unaware of the complexity and difficulty of the psychical art which they constantly practice. In the investigation of the patient's past history and present complaints it has been often pointed out that the skill required is properly to be compared to that of a cross-examining lawyer, but I think it has many other phases equally difficult and equally important. I see no good reason why training might not be provided in this branch of the art of medicine, why skilled clinicians should not become conscious and communicative with the methods and devices which they have been using all their lives for the attainment of truth and the avoidance of gross error in questioning patients.

Of course we are all familiar with the type of man who says, "After all, the history is not of much value; we never can depend upon what the patient says; we must rest our whole case upon the results of physical examination." Such a man may be sincere, but he certainly does not know what he is talking about. All the best diagnosticians that I know are agreed that in certain diseases, for example, in gallstone disease, and in most diseases of the stomach, the history is of far more value than the physical examination. This state of things is, of course, more obvious but not more real when we come to deal with diseases of the nervous system, especially with those ordinarily called functional, and with all that fall within the realm of the alienist; but I think there is hardly an important group of diseases in the whole list in which the diagnosis may not be seriously affected by the manner in which the history is obtained. Indeed, I think clinicians are agreed that there is fully as much skill demanded and used in history taking as in physical examination.

It is not quite true to state as some do that in the wards we are dealing with life and in the laboratory with dead things; of course much that we deal with in the laboratory is alive. But I think it would be true to say that the essential

difference between laboratory work and clinical work consists in this; that in the wards psychical elements are mixed up with all of the data both of observation and of treatment, while in the laboratory psychical data are reduced to the minimum and may be often measured in the form of some type of personal equation which can then be allowed for in our conclusions. Personally, I believe that this difficulty should be recognized in our medical curricula and that more training should be given in the psychical dexterity to extract a good history and to give effective treatment.

### III. WHAT SHOULD BE THE PROPER RELATION BETWEEN CLINICAL WORK AND LABORATORY WORK WITHIN A HOSPITAL?

It is obvious at the outset that we are here dealing with a problem of medical specialization. All the functions now separately performed by two sets of men, one in the laboratory and the other in the wards, were originally part of the work of a single group of men, and in some cases this is still true. Some of the English clinicians, for example, make their own autopsies and follow the tissues through. Yet I suppose we must recognize that this form of specialism has come to stay and, on the whole, if properly safeguarded, it makes for good work. What I wish now especially to insist upon is that this form of specialism, like all forms of specialism, brings with it particular evils as well as particular benefits, and that if we are to enjoy these benefits and avoid those evils, we must elaborate special methods, special apparatus *for neutralizing the evils*. If I may borrow a phrase from Sherrington whose remarkable work on the integrating function of the nervous system is doubtless familiar to you all, I should say that medical specialism within the hospital calls for special *integrating factors* if we are to get the good of it and not to run foul of obvious disasters. Some of the evils at which I have hinted are doubtless familiar to all of us. Not to dwell on the more obvious and avoidable types of evil, such as the mixing up of specimens in a laboratory, I will mention three points. First: many clinicians are incapable of utilizing the data given them by the laboratory expert. Secondly, many laboratory experts confess in moments of frankness that without some knowledge of the clinical aspects of the case they cannot make the decision which is asked of them as a result of their study of tissues.

Thirdly, many of us have been troubled by a lack of correlation between the ante-mortem and post-mortem facts. The man who does the autopsy often lacks interest in the special questions which have concerned the clinician during the patient's lifetime, and is reprehensibly indifferent regarding causes of death. On the other hand, we all of us can recall clinicians who calmly allow diagnoses to stand upon the clinical record after they have been flatly contradicted by the autopsy findings.

I will now take up these points somewhat more in detail.

(*a*) I am often astounded at the innocent confidence which is exhibited by clinicians when dealing with laboratory data concerning the examination of the blood, stomach contents, urine and feces. I see towering structures of therapeutic effort based upon laboratory findings which will not bear the strain. The interpretation of a hemoglobin measurement, of a Wassermann reaction, of a guaiac test, by clinicians is quite different in case that clinician chances himself to have done some of the work necessary to perform these tests. Unless one knows by actual experience the sources of error, the degree of accuracy, the kind of significance which any such test involves, he is quite incapable of using it at the bedside as an aid to his clinical work.

I do not mean to suggest that the clinician should do all these tests himself in each of the cases which he undertakes to attend and to treat, but I do most emphatically assert that no clinician can use effectively as a part of his clinical judgments, any physical, chemical or microscopic test which he has not himself performed often enough to know it intimately. In no other way can he understand where he can bear his whole weight and where he must step cautiously.

Occasionally men go to the other extreme. I have known a surgeon cut down upon an enlarged liver, despite the fact that he had seen in his clinical record of that patient a typical report of leukemic blood. This wholly unnecessary operation was performed because the surgeon was skeptical — in this case over-skeptical — of the value of laboratory tests. He might have known that a leukemic blood constitution is as certain as any fact in science; as certain, that is, in the conclusions which should be drawn from it regarding prognosis and treatment. On the other hand, I have seen a clinician base both diagnosis and treatment upon a single guaiac test in the feces, made without any knowledge of the patient's diet or the condition of his rectum. I have seen a negative Wassermann reaction taken as proper ground for abandoning anti-specific treatment.

But the laboratory worker also needs clinical data. Fragments of tissue from the prostate, from the uterus or from an enlarged gland will be more satisfactorily studied by a pathologist who has won in the wards an interest and comprehension of the patient whence the tissues come.

Further, the clinician and the man who does the autopsy need to get together more, both before and after the patient's death. In many autopsies the pathological items from different parts of the body and different systems of organs are written down in the summary of the autopsy findings, quite without any suggestion of which is the most important. One may study such protocols without getting any idea as to the causes of death and the sequence of events. This sort of impartiality seems to me quite unjustifiable. It would not occur, I think, if the pathologist had seen the patient often enough during life to acquire a genuine interest in the diagnostic problem involved. How did the disease start? What is to

be regarded as "complication" and what as the "original source" of the trouble? What is the cause of certain symptoms, of mysterious pains here and there, of sudden dyspnea, of unexplained cyanosis? What was the immediate cause of death? No physician has a right to neglect these questions merely because he calls himself a pathologist. The writing down of isolated items of pathologic anatomy in a summary of an autopsy protocol is a caricature of science, not the genuine article.

On the other hand, I have known physicians whose interest in the patient's disease ceased wih the patient's death. Wholly erroneous diagnoses thus remain upon the record book, uncorrected by the results of the post-mortem examination. As an extreme case, I remember a diagnosis of neurasthenia written upon a hospital record and remaining there until this day, although the autopsy showed that all the symptoms attributed to neurasthenia were, in fact, due to a cancer of the pleura of which the patient died.

## IV.

I think I have said enough to recall to our minds the evils which are familiar to us all, the evils of unguarded specialism in the field of hospital work. I turn now to consider what can be done to prevent these evils.

I have said above that in a hospital, as in the human body, effectiveness depends upon the presence of some integrating factor whch will prevent specialism from running wild and will remind the different parts of the system that they must be members of one body if they are to be of any use. At the Johns Hopkins Hospital we may recongize that for many years the integrating factors were the personalities of Dr. Osler and Dr. Welch. These wonderful men held together the whole system, prevented the laboratory specialist from being a mere laboratory man, and kept the clinician properly ashamed of his ignorance. I do not suppose such institutions as Dr. Osler and Dr. Welch can be made permanent in every hospital. They represent special providences, special mercies upon the part of nature which are not likely to be often repeated. Is it possible that the hospital superintendent might furnish such a factor of integration? Certainly not, so long as the present conception of his duties holds good. College presidents sometimes act as integrating factors, controlling the unrestrained specialism of the different departments, and it is perfectly conceivable that by a total change in our conception of the functions of the hospital superintendent he might come in this way to be a most essential factor in the success of the hospital's medical work. I do not say that this ought to be done; I merely say that it might be done, and if it is not done we must do something else and not drop the problem because it cannot be solved in this way.

I recently had occasion to observe how among the disintegrated units of an out-patient department, an integrating influence was introduced by the presence of a layman, a social worker, who happened to observe that patients treated for some weeks in the nerve room as cases of nervous prostration, turned up later in the department for tuberculosis because they were so obviously tuberculous that even the nerve specialists could not longer overlook the fact. This occurrence would have been wholly unknown to both departments and would have passed unnoticed but for the integrating presence of the social worker who passed unscathed through all departments and noted what she saw.

But if we cannot depend upon any such genius as Dr. Welch, nor upon a reformed hospital superintendent, nor upon a social worker, as an integrating factor in our hospital system, something may be done by the method used in the West Medical Service at the Massachusetts General Hospital during the past year, namely, by combined ward visits of a clinician, pathologist and others, by whose views our ward problems may be elucidated. Dr. J. H. Wright, director of our pathological laboratory, has made regular weekly visits in the wards with the visiting physician and his assistants, has read the histories of puzzling cases, sometimes making an examination himself or directing the point and method for the excision of some bit of tissue which needs examination. His point of view has been of constant value to the clinician, and I have no doubt has added to his own interest in the autopsy findings. We have also obtained much of value from the visits of Dr. Boos, the pathological chemist of the hospital, whose suggestions along pharmacological and therapeutic lines have been especialy valuable.

We need, however, to extend this system much further. We should have regular weekly or bi-weekly visits of a neurologist, a physiologist and a surgeon, not separately but always in conjunction with the clinician; and, of course, I am equally convinced that the physician should make rounds with the surgeon in the latter's wards, and should be a frequent visitor in the pathological laboratory, not only to learn the results of post-mortem examinations, but to familiarize himself with the technic of the physical, chemical and biological tests, the results of which he is required to interpret at the bedside.

Out of such combined ward visits is sure to come freer and more fruitful discussion of cases, better service to patients, a livelier scientific and practical interest all along the line.

### SUMMARY AND CONCLUSIONS.

(1) The essential difference between clinical work and laboratory work is not in the technical methods employed, nor in the degree of their accuracy, nor in the methods of reasoning used. The essential difference consists in the predominance of psychical elements among the data used in the wards, and their elimination in the laboratory.

(2) The clinician cannot safely utilize at the bedside, the results of laboratory tests which he knows only by reading. He should familiarize himself with these tests in the laboratory, in

order to understand the sources of error and the limits of reliability.

(3) No laboratory worker should remain out of touch with the clinical aspects of the cases which furnish him his material.

(4) In the absence of any single dominating personality as an integrating factor in the hospital system, the best available substitute seems to be *combined ward visits* in which the pathologist, surgeon, physician, chemist and physiologist work together for the increase of their practical and scientific fruitfulness. The evils of specialism may be thus in a measure neutralized and its benefits enjoyed.

## SHORT RÉSUMÉ OF THE HISTORY OF CÆSAREAN SECTION.*

BY ELIZABETH T. GRAY, M.D.,
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CÆSAREAN Section is an operation for the delivery of the child at term by means of an incision through the abdominal and uterine walls. This is supposed to be an operation of great antiquity. It is commonly assumed that it takes its name from Cæsar who is said to have come into the world in this way. Pliny mentions several other celebrities, Scipio Africanus and Manlius, who were born in this same manner. These early histories, however, are possibly mythical. But undoubtedly the practice of Cæsarean section dates back to prehistoric times.

A Roman law, ascribed to Numa Pompilius, made it obligatory upon physicians to remove the child by abdominal section in case the mother died during pregnancy.

During the Middle Ages, the Roman Church adopted this law, for by means of it they sought to rescue the child, that the rite of baptism might be bestowed upon it.

To-day it is forbidden in Austria to bury a woman, dying in the second half of pregnancy, without first performing Cæsarean section with all the care and technical skill used in operating during life, in hopes of either saving the child or at least of baptizing it.

Cæsarean section performed *just before* life was extinct has been reported as successful in saving the child, by Runge, in maternal brain tumor, by Frank in maternal general burns, by Sommerbrodt in maternal fibrosarcoma cerebri, by Hay in cerebral apoplexy, and E. P. Davis, of Philadelphia, has reported the delivery of a living child five minutes after the mother had died of eclampsia.

It having been shown that many children were saved in this way after the death of the mother, the question arose whether it would not often be right in cases of protracted labor, and where the life of the child, although not that of the mother, was threatened. This proposal met with bitter opposition and it was urged that to open the abdomen of the mother, even if her condition was hopeless, in order to save the life of the child, was a criminal procedure, and Virchow cites an instance in which a physician was prosecuted for performing Cæsarean section on a dying woman with hope of saving the child.

The first *recorded* Cæsarean section on a living woman was performed in the year 1500 by one Jacob Nufer, a butcher, who is said to have saved the life of his wife in this way. It is further stated that he operated many times later on other women.

In 1581 François Roussett published histories of fourteen successful Cæsarean sections, six of which were said to have been performed on the same woman. The authenticity of this report is doubtful.

About this time history shows that the operation was several times successfully performed, and many operators hastened to perform it without the proper indications. We are told that for a short time in Italy it became almost as common as blood-letting. Under these conditions a reaction soon set in and the operation fell into disrepute.

Later fresh proof was brought forward to show that it might be safe if performed by skillful hands. Undoubtedly this work of the seventeenth century in Cæsarean section has been greatly exaggerated by historians.

Women have performed Cæsarean section upon themselves. Harris reports that in one hundred and nineteen years six women have successfully performed this operation upon themselves.

The operation has been accidentally performed upon women, far advanced in pregnancy, by rips from horns of cattle. Harris also reports eleven cases of women ripped open by horned animals, eight of whom escaped death. The inhabitants of some of the uncivilized countries, notably in Central Africa, are known to have performed this operation, the result being favorable to both mother and child. Palm wine was the fluid used to wash the abdomen of the patient and the hands of the operator. The abdominal wound was closed by long pins, just as it was closed by the older operator among civilized nations, and sutures were placed over the pins in the figure-of-eight fashion.

The earliest well-authenticated case of Cæsarean section comes from Germany in 1610, by Trautman. The patient lived about three weeks after operation. No doubt was entertained with regard to her recovery. However, contrary to expectation, on the twenty-fifth day after the operation she suddenly became faint and died within half an hour.

Until very recently Cæsarean section was justly regarded as one of the most hazardous operations in surgery. Up to 1873 only from 37% to 40% of the operations resulted in recovery. Spaeth, writing about this time (1873), said: "There has not been a single case in the lying-in hospitals of Vienna in this century which has terminated favorably for the mother." Godson states, in this same year, that for over one hundred years there was not a single successful case in

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Vienna, and he, with other authorities, make the same claim for Paris. During about this same period Chiaria, of Milan, is credited with sixty-two operations, three of which were successful. The responsibility for these results was due, first, to septic infection, the evils of which were especially felt in hospital practice, and second to the postponement of the operation until the patient was almost moribund. Another great factor in preventing success was the persistent idea that the alternate contraction and relaxation of the uterus forbade the use of the uterine suture; consequently the wound in the uterus was left to gape open, and closure in the few favorable cases was brought about by an inflammatory process which bound the uterus to the abdominal walls.

So strong was this idea that only a comparatively short time ago Porro proposed to avoid the risks of the gaping of the uterine incision by the removal of the uterus at the time of the section, after the delivery of the child.

The operation to-day takes its place among the most successful of surgical procedures, and American surgeons have done much to put it in this position. The success of the present-day Cæsarean section is due largely to the following factors:

First, strict aseptic precautions.

Second, early resort to operation before the patient's strength has been exhausted by lengthy efforts to extract the child by the natural passages.

Third, to the careful and complete closure of the uterine incision.

Fourth, to a *perfected technic.*

In contrast to the reports of the results of the operation, previous to 1873, Edward Reynolds reports as known to him personally thirty operations with thirty recoveries. To obtain such results it is of vital importance that the operation should be undertaken early, that the operator should be familiar with every detail, that it must not be undertaken as a last resort. It must be a conservative procedure, undertaken to save the lives of both mother and child.

Carefully examined statistics show that if undertaken as above the mortality to the mother is no higher than from uncomplicated oöphorectomy and to the child *nil.*

A résumé of the statistics of Leopold, Olshausen and Zweifel show a mortality of 5.8% for the conservative operation, and 3.7% for the Porro.

We find, in difficult forcep deliveries, from 1 to 3% mortality to mother and 25 to 30% to child, and it is a well-known fact that many of the infants who survive this forcep extraction are seriously injured for life.

There are two men who are so closely connected with the history of the modern Cæsarean section that we speak of the operation as the *Porro-Cæsarean* or the *Sanger-Cæsarean.* About 1876, when the maternal mortality was so great that the operation was practically condemmed, Porro, of Milan, introduced his method, in which the operation of Cæsarean section was accompanied by the amputation of the uterus. It is claimed that before Porro operated upon women in this way, he and Spaeth, of Vienna, experimented successfully upon dogs and rabbits. Statistics now showed that this was a very successful procedure and at this time gave a far better showing than the operation in which the uterus was left behind.

Sanger, of Leipzig, now insisted that the suturing of the uterine wall was essential, and after careful suturing was carried out the results were as favorable as in the Porro, without the mutilation of the latter operation.

Undoubtedly in those years when *all* abdominal surgery was dangerous and infection carried off a large percentage of the cases the Porro was a safer operation than the conservative Sanger. Surgical practice has now changed so largely that these two operations have become complemental to each other and are no longer rivals in the same field.

The Porro should be performed when some morbid element makes it dangerous to keep the uterus in the body. Present-day statistics are teaching us that the mortality is lower in those cases where the operation is performed a second or third time upon the same patient than with the first operation, probably because these last operations are operations of election, and so a more favorable time and better preparation is obtainable than in the first operation.

A few cases have been reported where each patient was operated upon successfully four times.

The results of a successful Cæsarean section are so brilliant that there is danger that the pendulum may swing too far on the side of this operation and we must be careful to remember that the section should only be resorted to when the indications are clearly defined, and only after the most thorough preparations have been instituted for its performance and the proper assistance obtained.

## INDICATIONS FOR CÆSAREAN SECTION.

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It may truly be said that the practice of medicine is now dominated by the surgeon. In early times, the surgeon was pre-eminently the "bone doctor." To set fractures, to reduce dislocations and to amputate was his special province. Beyond these functions he was seldom in demand. Now, it is quite a different matter. His co-operation is not only a necessity, but without it we dare not proceed too far.

If we have a doubtful brain lesion, he trephines; if we are treating rhinitis, he removes the turbinates; our pale, delicate children grow rosy after an operation for adenoids and tonsils; our patients with persistent pain between the shoulders have their scapulæ trmmed off, and when we are struggling with the digestive and genito-urinary tract, nothing escapes his zeal. Cases of apparently simple indigestion are found to depend on appendicitis, acute or chronic, or on duodenal ulcer, or gallstones. These recover more quickly

under the surgeon's knife than by ringing the changes on taka-diastase or the Bulgarian bacillus. Those patients who waited in the physician's office year in and year out for pelvic treatment now seek relief by oöphorectomy and ventral suspension. Cystoscopy brings the surgeon face to face with the urinary tract and calculi and neoplasms of kidneys and bladder.

Even from obstetrics the surgeon is no longer excluded, but is frequently summoned to aid the accoucheur.

The indications for Cæsarean section have been classified by various writers as absolute and relative.

The absolute remains, and ever will remain, unaltered, viz., maternal or fetal dystocia, rendering the removal of the fetus, unless by embryotomy, impossible.

Formerly Cæsarean section was performed only after the death of the mother, and instances are recorded of the delivery of a living child as late as twenty-three minutes after maternal death. This is still occasionally done, but must, of course, follow immediately the mother's death.

Under absolute indications would also be classed extremely narrow or deformed pelvis, the presence of tumors blocking the genital tract, such as uterine fibromata, ovarian cysts, or pelvic exostoses, and pathological conditions of the cervix causing rigidity of the os.

During labor the absolute necessity may arise, especially in an emergency case, where no antipartem examination has been made, — an abnormally large child, or a child disproportioned to the size of the pelvis, — or the maternal forces may fail making some interference necessary. Here we have a choice between Cæsarean section and embryotomy Twenty years ago, the former would have been only rarely considered, but we feel that with the aseptic technic that so generally prevails to-day, we not only save the child, but give the mother a better chance, than by dragging a mutilated baby through a contracted pelvis.

Cæsarean section after death of the child has been considered bad practice, but now it often seems wiser, because quicker and more aseptic for the mother.

A pelvis with true conjugate of 6.3 cm. is a positive indication for Cæsarean, even with a small child; while with a fully or over-developed child, 7 cm. would just as surely demand Cæsarean.

The day is over when only a conjugate of 7.5 cm. warrants the capital operation. We have many borderland cases.

It is with the relative indications that the obstetrician most frequently deals, and antepartem conditions must be carefully considered for both mother and child. A diminished conjugate, between 8 and 9 cm. with a child developing normally in size, indicates induction of labor at thirty-four to thirty-six weeks, or Cæsarean section at term.

Induced labor with it necessary manipulation, — possibly instrumental delivery and a premature baby, — seem to present greater risk for both mother and child than an aseptic and rapid Cæsarean section.

In older primiparæ we often find the desire for childbearing intense and the death of the baby would be a great misfortune. In such cases, we often have more or less rigidity of the soft tissues of the pelvis, associated with diminished measurements. Hence we advise Cæsarean as giving the full-term baby the best chance for life.

Cæsarean section in eclampsia is now coming to the front for consideration.

Recently, at the Maternity of the New England Hospital, we have had two such cases, — both primagravidæ, — both were transferred from the medical ward after convulsions had set in; each patient had a rigid, uneffaced cervix. In the first case, we spent several hours in ineffectual attempts to dilate the os uteri; manual and instrumental dilation were both tried, but it was absolutely impossible to dilate the os sufficiently for version or forceps Cæsarean section was performed — the premature baby lived one or two days; the mother, a few days longer.

The second case was transferred at once to the surgical ward with excellent results for both mother and child.

In case of eclampia in a multigravida or in a primagravida with elastic, dilatable cervix, the radical operation would hardly be considered.

For placenta previa, Cæsarean section at this present time seems more serious than prudent. Although advocated by some writers, it is regarded as a doubtful proceeding by conservative obstetricians. In the future, should our technic be still further improved, it may be more favorably considered.

## TECHNIC OF THE OPERATION.*

BY MARY A. SMITH, M.D.,

*Visiting Surgeon to New England Hospital.*

THE term "Cæsarean section" is applied to several operations, with varying technic. An intelligent selection from these demands also consideration of the alternative operations, viz., laparo-eletrotomy, symphyseotomy, hebosteotomy and craniotomy.

The degree of pelvic contraction, the stage of labor and the condition of the patient are vital factors in the decision. Thomas' laparo-eletrotomy — a suprapubic delivery of the cervix into the abdominal wound — avoids incision into the uterus, but is too complicated for general adoption. Symphyseotomy and hebosteotomy, while applicable in cases of moderate pelvic contraction (not below 7 cm.), demand the use of special instruments and trained assistants. They involve danger of injury to the bladder and blood vessels, frequently causing severe hemorrhage at the time, and thrombus or hematoma later, or, through non-union, permanent or serious disablement. Hammerschlag estimates that 10% of these cases are followed by thrombus and 19.5% by hematoma, while the maternal mor-

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tality is 10% and the child's 9%. Hebosteotomy has the advantage that a patient may be allowed to enter upon labor and given a chance of natural delivery, with the certainty of being able to terminate the same should the pains prove ineffectual, or the patient show signs of exhaustion. On the other hand, it requires full dilatation of cervix, and usually the necessity of version or forceps for delivery of child.

It has been estimated that 20% of epileptics and children in hospitals for the feeble-minded were delivered by high forceps, and bone fractures and other injuries to the child are not uncommon.

Craniotomy has fallen into great disrepute except in case of a dead child. Vaginal Cæsarean was brought out by Dühessen in 1896. The special indications for it are in maternal cardiac disease, stenosis of cancer of cervix and especially in eclampsia with rigid cervix. It requires trained assistants as the technic is rather complicated, a roomy pelvis, and requires more time than an abdominal section. It remains to be proven whether the scars in the cervix and lower uterine segment will interfere with subsequent pregnancies more or less than those in the fundus of the uterus. It is very much favored by German and French surgeons. Williams reported nine cases in 1909, and favors it.

To avoid hemorrhage, the incisions should be made in the exact median line, and long enough for the easy extraction of the child, as a tear at the upper end extending obliquely might give rise to excessive hemorrhage. After delivery of child and placenta, reintroduce speculum and draw down on the traction sutures till the whole wound is brought well into view. Begin sewing at the top of the incisions, taking the posterior one first, and pack the uterine cavity with gauze to insure good contraction of the uterus before sewing up the anterior incision. Afterwards sew up the rents in the vagina.

Latzto makes an incision in the lower part of abdomen, pushes aside the bladder and peritoneum, divides the left vesical ligament and makes an extraperitoneal Cæsarean operation, especially good in late cases, and if they have become infected, he drains first and sews up the incisions later. Porro was the first to deliberately plan and carry out the removal of the pregnant uterus, 1879. It has the disadvantage of sterilizing, the woman when more children are desired, but is the operation of choice in infected cases, or where tumors are present which make a future pregnancy undesirable.

The technic is the same as for the Sänger operation up to the removal of the child, and after that the same as in any suprapubic hysterectomy. The mortality of this operation was at first about 50%, but is now very much less. Since the details of the so-called conservative Sänger-Cæsarean have been perfected (1882), this has become the operation of choice with the large majority of surgeons. By it the maternal mortality has been reduced to 2 or 3% and practically all healthy children delivered at term should survive. Moreover, it may be repeated many times in the same patient without serious damage to the uterus provided it has been well sewed up and no infection taken place.

BEST TIME FOR PERFORMING CÆSAREAN SECTION.

It was formerly thought necessary to wait till labor had begun and the cervix well dilated in order to assure proper uterine contraction and avoid hemorrhage. But it was later found that the vitality of the uterine fibers becomes exhausted by prolonged contractions of same, and is not conducive to good healing. Moreover, it has been found to be unnecessary, so while in the interest of the child it is well to delay till the end of pregnancy in uncomplicated cases, the operator may then set the time for his convenience. Preparations for Cæsarean section are about the same as for other abdominal operations. Asepsis is, of course, of prime importance. Very few instruments are required. Scalpel, scissors, hemostatic forceps with needles and suture materials are amply sufficient.

The abdominal incision most frequently employed is in the median line and to the left of the umbilicus, from one half to one third being above same, and from one half to two thirds below it. It is hardly worth while to waste time in applying hemostats, as simple pressure with the gauze sponges is sufficient. The sponges also protect the abdominal cavity from being soiled with either blood or aminotic fluid. In uninfected cases it is unnecessary to remove the uterus from the abdomen. Fritsch and some others prefer to incise the uterus transversely in the fundus from one tube to the other, and a few make an incision in the posterior uterine wall in order to avoid adhesions to the abdominal wall, but most surgeons make a clean cut in the fundus and prolong the incision in the anterior wall just far enough to permit the extraction of the child. If possible, avoid the placental site, which in one half the cases is in front, but if not, do not cut through it, but loosen up quickly on one side, rupture the aminotic membrane if fluid is not already gone, seize child, preferably by the feet, and extract same. The cord is then doubly clamped and cut between, and the child is taken away to be resuscitated by an assistant, if necessary, but often it cries out before leaving the table. If head should become wedged in cervix and does not readily yield to traction from above, an assistant must push it up from the vagina.

It is unnecessary to pass a rubber ligature around the cervix, but an assistant may grasp a broad ligament in either hand and by pressing firmly down against the cervix compress the vessels to avoid hemorrhage. Meantime the operator removes the placenta and wipes out the uterine cavity, another assistant grasps the fundus with both hands and holds it firmly while the wound is being sewed. A hypodermic of ergotale is now in order. Up to this time not more than from one to two minutes has been consumed, and while no undue haste should be used, still there should be no delays between the consecutive steps in the

operation. The sutures may be of linen, silk or tendon but never of catgut, as such knots are apt to loosen as the muscle fibers shrink, or are too rapidly absorbed before healing is complete. The first row of sutures should enter a little back of the edge of the wound under the peritoneal covering, and pass through the whole thickness of the uterine muscle to but not through the mucosa, reversing the process on the opposite side, and be immediately tied. They should be about 1 cm. apart. The second row of sutures should also be interrupted and sufficient in number to accurately bring the peritoneal edges together over the deeper layer, which are thus lost to sight.

In clean cases one may draw the omentum down over the uterus to prevent adhesions to the abdominal wall, or in septic cases better to put it behind to protect the intestines, as sepsis is most likely to show itself by breaking through the line of incision.

The abdominal wound should be closed with layer sutures, and dressed like any other abdominal wound. Firm support to the wound and much comfort to the patient may be given by applying a broad strip of adhesive plaster on either side. These are laced together by means of shoe hooks fastened into the edge of same and can be unlaced to remove the sutures or adjust the dressings. The patient wears this until she is ready to be discharged, when she is fitted with some form of abdominal support.

The after care is the same as for any puerperal case.

## THE IMMEDIATE RESULTS OF CÆSAREAN SECTION.*

BY JOHN T. WILLIAMS, M.D., BOSTON.

FOR permission to use the statistics from the Boston Lying-In Hospital I am indebted to Dr. Charles M. Green, visiting physician, and I furthermore wish to acknowledge my obligation to Drs. Newell, Swain, Friedman, Torbert, Mason and De Normandie, of the hospital staff, for the use of their cases.

Although Cæsarean section has been performed sporadically for three centuries, it is only within the last fifteen to twenty years that the results have been such as to justify its use in any except the most extreme cases of pelvic contraction.

Budin [1] is authority for the statement that every Cæsarean section performed in Paris between the years 1787 and 1876 resulted fatally. Contrasted with this is Reynold's [2] series of thirty personal cases without a single death, reported in 1907. The reasons for this improvement in results are:

1. The introduction of asepsis.
2. The introduction of uterine suture.
3. The proper selection of cases.

The importance of the first two of these factors is obvious and needs no further mention. It is chiefly with the consideration of the third that I shall deal in this paper.

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Three years ago Reynolds [2] collected all the reported cases of Cæsarean section performed during the preceding ten years by obstetricians who had done at least five operations. He classified them all under three headings: Primary, secondary and late sections. He called those operations performed before the onset of labor, primary; those done early in the first stage, secondary; and those done after six hours of strong pains, twenty-four hours of trifling pains, or in which the os was dilated more than the size of a half dollar, late Cæsarean sections. I have taken the cases collected by Reynolds, and added to them all which I could find similarly reported since, and including 100 published [3] and 44 hitherto unpublished operations at the Boston Lying-In Hospital. The results with regard to maternal mortality appear in the following table:

| | Primary. | | Secondary. | | Late | |
|---|---|---|---|---|---|---|
| Author. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| Reynolds,[2] | 82 | 1 | 158 | 6 | 49 | 6 |
| B. L. H., | 75 | 3 | 37 | 3 | 32 | 6 |
| McPherson,[4] | 2 | 0 | 40 | 5 | 107 | 17 |
| Polak,[5] | 4 | 0 | 4 | 1 | 6 | 0 |
| Spalding,[6] | 2 | 0 | 2 | 0 | 3 | 0 |
| Frederick,[7] | 2 | 0 | 1 | 0 | 1 | 0 |
| Kynoch,[8] | 5 | 1 | 0 | 0 | 0 | 0 |
| Reddy,[9] | 0 | 0 | 2 | 0 | 3 | 0 |
| Canton,[10] | 0 | 0 | 2 | 0 | 6 | 0 |
| Wallace,[11] | 9 | 0 | 4 | 0 | 3 | 1 |
| Reid,[12] | 1 | 0 | 2 | 0 | 1 | 0 |
| Mouchotte,[13] | 0 | 0 | 8 | 0 | 6 | 0 |
| Boyd,[14] | 3 | 0 | 1 | 0 | 2 | 0 |
| | 185 | 5 | 261 | 15 | 219 | 30 |

These figures show definitely that the mortality of Cæsarean section increases in direct proportion to the length of time in labor, being 2.7% in the primary, 5.7% in the secondary and 13.7 % in the late operation. The causes of death were as follows:

| | Primary. | Secondary. | Late. | Total. |
|---|---|---|---|---|
| General peritonitis, | 3 | 6 | 16 | 25 |
| Uterine sepsis, | 0 | 0 | 4 | 4 |
| Septicemia and pyemia | 0 | 3 | 0 | 3 |
| Thrombosis and embolism, | 0 | 1 | 1 | 2 |
| Pneumonia, | 1 | 2 | 4 | 7 |
| Hemorrhage, | 1 | 0 | 0 | 1 |
| Shock, | 0 | 0 | 2 | 2 |
| Rupture of uterus, | 0 | 0 | 1 | 1 |
| Intestinal obstruction, | 0 | 0 | 1 | 1 |
| Acute dilation of stomach, | 0 | 1 | 0 | 1 |
| Chronic nephritis, | 0 | 1 | 1 | 2 |
| Paraplegia from Pott's disease, | 0 | 1 | 0 | 1 |
| | 5 | 15 | 30 | 50 |

In those patients who recovered, the morbidity of the convalescence also increased in proportion to the duration of labor, being 5% in the primary, 6.5 % in the secondary and 10.5 % in the late sections, as shown in the following table.

| | Primary. | Secondary. | Late. |
|---|---|---|---|
| Wound sepsis, | 4 | 7 | 8 |
| Uterine sepsis, | 5 | 5 | 8 |
| Uterine and wound sepsis, | 0 | 0 | 1 |
| Phlebitis, | 0 | 4 | 2 |
| Pneumonia, | 1 | 0 | 0 |

A few words about fetal mortality in Cæsarean section. We have been accustomed to consider

this operation as promising infallibly the birth of a living child, making allowance for an occasional case in which resuscitation falls, and this is certainly true in the primary and secondary sections. In the late section, however, where the fetus as well as the mother has borne the strain of a long and difficult labor, and especially where unsuccessful attempts at delivery have been made, often by practitioners little skilled in obstetric operating, there is a distinct percentage of stillbirths, 5.48 % in the series which I have collected. Adding to these deaths occurring during the first five days of life, the infantile mortality of the late operation rises to 13.28 %, making it a procedure not only dangerous to the mother, but often futile in saving the life of the child. The fetal mortality is shown in the following table.

| Author. | Primary. Cases. | Primary. Stillbirths. | Primary. Deaths. | Secondary. Cases. | Secondary. Stillbirths. | Secondary. Deaths. | Late. Cases. | Late. Stillbirths. | Late. Deaths. |
|---|---|---|---|---|---|---|---|---|---|
| Reynolds,[3] | 82 | 1 | 2 | 158 | 1 | 2 | 49 | 1 | 3 |
| B. L. H., | 75 | 1 | 2 | 37 | 0 | 2 | 32 | 1 | 2 |
| McPherson,[4] | 2 | 0 | 1 | 40 | 0 | 2 | 107 | 13 | 5 |
| Polak,[5] | 4 | 0 | 0 | 4 | 0 | 0 | 6 | 0 | 0 |
| Spalding,[6] | 2 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 1 |
| Frederick,[7] | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Kynoch,[8] | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reddy,[9] | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 1 |
| Canton,[10] | 0 | 0 | 0 | 2 | 0 | 0 | 6 | 1 | 0 |
| Wallace,[11] | 9 | 0 | 1 | 4 | 0 | 0 | 3 | 0 | 0 |
| Reid,[12] | 1 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 0 |
| Mouchotte,[13] | 0 | 0 | 0 | 8 | 0 | 0 | 6 | 0 | 0 |
| Boyd,[14] | 3 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 |
| | 185 | 2 | 7 | 261 | 1 | 6 | 219 | 16 | 12 |

The causes of fetal death in the above series were as follows:

| | Primary. | Secondary. | Late. |
|---|---|---|---|
| Atelectasis, | 2 | 0 | 0 |
| Prematurity, | 0 | 5 | 0 |
| Long labor, | 0 | 0 | 8 |
| Attempts at operative delivery, | 0 | 0 | 4 |
| Congenital heart disease, | 1 | 0 | 0 |
| Spina bifida, meningitis, | 1 | 0 | 0 |
| Unknown, | 3 | 1 | 0 |
| | 7 | 6 | 12 |

Next in importance to prolonged labor and unsuccessful attempts at delivery as a cause of fetal mortality is prematurity. Whenever a Cæsarean baby does not appear especially vigorous, it should be treated as a premature child for the first few weeks. Aside from these conditions, the mortality of children delivered by Cæsarean section is entirely an accidental one.

### CONCLUSIONS.

1. Primary Cæsarean section is a simple and safe operation with a low maternal mortality.

2. The mortality from Cæsarean section increases in direct proportion to the duration of labor, being only 2.7 % in the primary, 5.7 % in the secondary, and 13.7 % in the late operation.

3. Maternal morbidity as well as mortality is increased in the secondary and late Cæsarean sections.

4. While there is no fetal mortality as a result of the operation where the fetus has been previously subjected to the strain of a long and difficult labor, the operation is frequently unsuccessful in saving the life of the child.

5. The maternal mortality of 13.7%, and the percentage of 13.28 of unsuccessful results for the child make the late Cæsarean section an unjustifiable operation.


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[3] Green, Newell, Friedman, Torbet, Mason and De Normandie: *Ibid*, 1909, clxi, 803–816.
[4] McPherson: Bull. Lying-In Hosp. N. Y., 1908, v, 169–174.
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[9] Reddy: Montreal Med. Jour., 1907, xxxvi, 316–319.
[10] Canton: Ann. de gynéc., 1907, ii. s., iv, 542–546.
[11] Wallace: Practitioner, 1907, lxxviii, 337–360.
[12] Reid: New York State Med. Jour., 1908, viii, 3–6.
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## THE END RESULTS OF CÆSAREAN SECTION.*


BY NATHANIEL R. MASON, M.D.,

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We may divide the end results of Cæsarean section into two classes.

First, those conditions which may occur as a result of the operation.

Second, those complications incident to other methods of delivery which are avoided by it.

Of the latter class we will mention first the absence of perineal and vaginal tears, prolapse and procidentia which frequently follow deliveries per vaginam, especially by means of those operative procedures between which and Cæsarean section the obstetrician is repeatedly called upon to choose. This advantage of Cæsarean section is too obvious to demand further explanation.

Less well recognized but of even greater importance is the absence of nervous collapse, which is far from uncommon as a sequel to labor in the over-civilized woman of to-day. Constitutional ill-equipment for labor was first recognized as an indication for Cæsarean section by Reynolds.[1] His views have been supported by Davis,[2] Newell [3] and others. Reynolds says that when a poorly equipped woman has lost in strength and health during pregnancy, the pains are nearly always poor and irregular, and the uterus acts poorly. Labor is not likely to be spontaneous, and is often followed by a neurasthenic state lasting for a long period.

Those patients of this class upon whom he has performed Cæsarean section have made perfectly satisfactory convalescences and have enjoyed good health during the subsequent year, in marked contrast to the much greater number of those whose labors have been treated by other measures.

The original indication for the performance of Cæsarean section was to secure a living child. To secure a child not only living, but *free from*


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*injury*, should be the object of every obstetrical procedure. The avoidance of fetal morbidity is a greater triumph for Cæsarean section than the saving of fetal life. The cases of hemiplegia idiocy, epilepsy and even of brachial paralysis following difficult intrapelvic operations are the worst results in obstetrics.

A history of difficult or operative delivery was obtained in 29 % of his cases of idiocy by Shuttleworth [4]; 8.9% by Küntzel [5] and 11.6% by Mouser.[6]

Frazier [7] believes that 30 % of all children who recover from cerebral hemorrhage at birth develop epilepsy later in life. Mouser found that 17.64 % of his cases of epilepsy had a history of difficult birth.

It must be remembered, however, that Cæsarean section does not guarantee a child free from injury when the operation has been performed only after a prolonged labor or ineffectual attempts at delivery.

The possible evil results of Cæsarean section may be enumerated as follows: Hernia, uterine fistula, adhesions, rupture of the uterus.

*Hernia.* — It used to be stated that the abdominal wound after Cæsarean section might be closed with through-and-through sutures without danger of hernia, because the relaxed condition of the abdominal wall removed all possibility of strain upon the wound. This statement has proved fallacious. Hernia, although rare, does occur. In 39 repeated Cæsarean sections performed at the Boston Lying-In Hospital, a hernia was found in the former scar of two. In neither of these was the previous operation done at the hospital, so the method of suture is unknown.

*Uterine fistula.* — A fistulous opening into the uterine cavity may develop as the result of infection of the uterine sutures. Haven and Young [8] found 3 such instances among 167 Cæsarean sections collected from the literature. In another such case, reported by Schütte,[9] rupture of the uterus took place in a subsequent pregnancy.

*Adhesions.* — Adhesions are frequent after Cæsarean section, especially between the uterine and abdominal scars, but seldom give rise to trouble. v. Leuwen [10] found adhesions reported in 76 out of 117 repeated Cæsarean sections. They were present in all but 2 of the 39 repeated Cæsareans at the Lying-In Hospital, but not one had any symptoms whatever referable to their presence. In one patient the adhesion between the uterus and abdominal wall was so dense that four Cæsareans were done extraperitoneally, and in one other the fourth operation was performed without opening the peritoneum.

The location of the adhesions found at repeated Cæsarean sections in the cases collected by Haven and Young [8] as well as of those at the Boston Lying-In Hospital is shown in the following table: Gellhorn [11] has reported a case of dystocia following Cæsarean section where the adhesion of the uterus to the abdominal wall caused a depression in the center of the uterus. The fetus was in a transverse position, which could not be corrected by external version, but the patient was successfully delivered of a living child by internal podalic version.

| | Haven and Young. | Boston Lying-in-Hospital. | Total. |
|---|---|---|---|
| Omentum adherent —to uterus, | 16 | 1 | 17 |
| Omentum adherent —to abdominal scar, | 15 | 12 | 27 |
| Omentum adherent —to bowel, | 0 | 1 | 1 |
| Intestine adherent —to uterus, | 4 | 3 | 7 |
| Intestine adherent —to abdominal scar, | 3 | 2 | 5 |
| Uterus adherent to anterior abdominal wall, | 36 | 30 | 66 |
| No adhesions found, | 3 | 2 | 5 |

Adhesions following Cæsarean section do not appear to predispose to miscarriage in subsequent pregnancies. v. Leuwen,[10] in 194 pregnancies following Cæsarean section, found 8 miscarriages, 4.1%; as against 7.5% among 7,718 pregnancies in the clinic of Utrecht during the year 1904.

*Rupture of the uterus.* — The danger of rupture of the uterus in the scar of a former Cæsarean section has been urged as an indication for the routine performance of elective Cæsarean section in subsequent pregnancies. Twenty-one cases of rupture of the uterus during pregnancy or labor in patients upon whom the classical Cæsarean operation had previously been performed are to be found in the literature.[12] In addition to these are twenty instances of thinning of the scar in all or part of its length, which have been collected by v. Leuwen.

Early in the present year, the reader,[12] in conjunction with Dr. Williams, published the report of some experimental work upon the strength of the uterine scar in animals. Our experiments were conducted on cats and guinea-pigs. They consisted of performing Cæsarean section upon these animals as nearly as possible after the methods used in human beings, later removing the uterus and suspending weights to that portion of the uterine muscle containing the scar. It was found in each experiment that the muscle gave way first, and that the scar withheld any strain which could be borne by the uterine wall.

In addition to this experimental evidence of the strength of the uterine scar, we found at the Boston Lying-In Hospital two patients having had previously Cæsarean section who underwent safely normal deliveries,[13] and one other, with a scar due to rupture of the uterus,[14] who passed through the extraction of a breech without untoward results.

In the literature we found 32 cases collected by v. Leuwen [10] of delivery at term through the natural passages after a previous Cæsarean sec-

tion without apparent injury to the uterine scar, and 117 others collected by the same writer who went safely through pregnancy and were again delivered by Cæsarean section.

A careful study of the reported cases of uterine rupture was then made, as a result of which we formulated the following conclusions:

Rupture of a Cæsarean scar is always secondary to unusual weakness of the scar, dependent upon imperfect consolidation.

The most frequent cause of imperfect consolidation is placing the deep stitches too far apart, or not including the entire thickness of the uterine muscle.

Location of the incision and suture of the placental site probably do not affect the strength of the scar.

Infection in certain instances plays a very important part in causing weakness of the cicatrix.

Catgut as a suture material is open to the objection that there is at least a possibility of the stitches becoming untied, and that certainly more cases of rupture have occurred after its use than after the use of silk.

Finally, it seemed to us then and still seems that, given a uterus which has been sutured with care to include the entire thickness of the muscular portion of the wall in each stitch, and to place the deep stitches close together throughout the entire length of the incision, using silk or linen, and where there has been no evidence of sepsis during the convalescence, such a uterus may be subjected with safety to distention by a full-term pregnancy, or even to the strain of labor itself.

*Repeated Cæsarean sections.* — At the Boston Lying-In Hospital there have been performed 39 repeated sections on 26 patients, 2 having had five; 1, four; 5, three; and 18, two. There have been three deaths each after a second section. v. Leuwen [10] gives the mortality in 104 repeated Cæsareans as 3 %. In other words, the mortality is no greater in the repeated operation than in the first, and does not increase with the number of the Cæsarean.

The question has been raised of how frequently a patient may be delivered with safety by Cæsarean section. Of the two patients who had five operations each, in one eleven years, and in the other twelve years and six months elapsed between the first and fifth. Two patients each had two Cæsarean sections within thirteen months. In the entire series the average elapsed time between operations was three years and eight months. It may be safely stated that pregnancies may be permitted as frequently when Cæsarean section is necessary as though the patient were expected to be delivered by the natural passages.

*The justifiability of sterilization after Cæsarean section.* — With the mortality of the repeated operation no greater than of the first, and with the constantly decreasing mortality of elective Cæsarean section, there seems to be little justification for the performance of sterilization. It must always be remembered that the child or children of the patient may die, or she may make a second marriage, under either of which circumstances another pregnancy may be most earnestly desired. The words of Dr. Green [16] on this subject have been widely quoted throughout the civilized world. "If a woman comes to Cæsarean section and recovers, she and her husband, if she has one, should be informed of her condition and of the prognosis and treatment in the event of future pregnancy; if subsequent pregnancy ensues, the responsibility of treatment rests with the obstetric surgeon, but the responsibility for the condition rests elsewhere."

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# Reports of Societies.

## ASSOCIATION OF AMERICAN PHYSICIANS.

TWENTY-SIXTH ANNUAL MEETING, HELD AT ATLANTIC CITY, N. J., MAY 9–10, 1911.

THE President, DR. F. FORCHEIMER, Cincinnati, in the chair.

### PRESIDENT'S ADDRESS: THE GENERAL PRACTITIONER.

THE general practitioner is still the backbone of the medical profession. His development implies so much attrition, so much knowledge, so much resourcefulness so much character and so much humanity that when the general practitioner has attained his full growth he is easily among the first citizens of his community. Nowhere does weeding out go on more rapidly than in the medical profession. Those who are eliminated first are the ones who have failed on account of adverse external conditions such as poverty and professional competition. Hartman accepts three kinds of nobility, namely, of birth, of mind and of finance, and places physicians in the second class. Premedical education is in a chaotic condition. According to the higher demands of certain states and certain schools so much time is required for premedical education that the student gets through his medical course at too advanced an age. The remedy for this lies in making a change in the curriculum of the primary and the secondary school.

### A CLINICAL STUDY OF ASCITES.

DR. R. C. CABOT, Boston: Owing to a series of errors which I have made in the diagnosis of ascites, and to minimize the number of mistakes in the future, I have tabulated the autopsy and operation records of the Massachusetts General Hospital for the past forty years. The bulk of the cases are found to be due to one of five causes: Cardiac weakness, nephritis, abdominal neoplasms, cirrhotic liver or tuberculous peritonitis. Among the possible causes of extensive ascites we must not lose sight of the small solid tumors of the ovary. Pleural effusion may be produced by an

extensive ascitic accumulation. This association may lead to a false diagnosis of pleural and peritoneal tuberculosis. The cure of both pleural and peritoneal effusions may result from excising a benign ovarian tumor. Among all causes of ascites, tuberculous peritonitis may sometimes be recognized by the greater slowness of its accumulation of fluid.

DISCUSSION.

DR. LEWIS A. CONNER, New York: Did Dr. Cabot make a study of the fluid itself to aid him in his diagnosis in ascites? It seems to me sometimes that is of considerable value just as it is in pleural fluid.

DR. CABOT, Boston: We worked with the fluids in every case, and I was impressed with the fallibility of this test when one came to really doubtful cases. Of course in cardiac or renal cases one got low gravity fluids, but when one came to tuberculous peritonitis, cirrhosis of the liver and ovarian ascites, the three in which there is real difficulty in diagnosing, at times the characteristic fluid was present but, as a rule, nothing of importance; the albumen and specificity were no guide in these cases.

THE PRESENT STATUS OF THE TUBERCULIN TEST.

DR. LAWRASON BROWN, Saranac, N. Y.: The Von Pirquet and the Calmette test for tuberculosis have greatly extended our use and knowledge of tuberculin. Among laboratory animals only those which are tuberculous react to tuberculin. Normal animals have tuberculin tolerance but no tuberculin anaphylaxis. Many autopsy reports throw grave doubt upon and, personally, I believe disprove all published statistics which go to show that other diseases react specifically to tuberculin. Such cases are in reality double infection. A slight tubercular infection may be sufficient to cause a reaction for a time and yet leave no permanent pathological change visible to the naked eye. The conjunctival test has produced a number of unfortunate accidents, but, by excluding all patients who have ever had trouble with their eyes and using only 1 to 5% solutions of the old tuberculin, the test seems comparatively safe. There is some danger in the cutaneous test, but it is so slight that it may be disregarded except in scrofulous children. The tuberculin test sometimes results positively in healthy men, a circumstance which warns us not to depend too much upon it. Also, failure to react to 10 mgm. of old tuberculin given subcutaneously, does not exclude clinical tuberculosis. However, in the presence of indefinite symptoms these cases do not require treatment. A negative subcutaneous test in a tuberculous person may indicate either the absence of receptors at the site of the lesion or the presence of free antibodies in the blood. If we except, for the time being, leprosy, tuberculin is a specific test for the detection of tuberculous infection. In practice, exposure to infection, characteristic symptoms, such as hemoptysis, pleurisy with effusion or dry pleurisy on both sides, and localized persistent physical signs at one apex are diagnostic data of far more importance in clinical tuberculosis than that derived from the tuberculin tests. The subcutaneous test is still the most reliable of the tuberculin tests.

DISCUSSION.

DR. FREDERICK C. SHATTUCK, Boston: I wish to corroborate Dr. Brown's statement that the subcutaneous test is the most reliable. I have used it for many years with the utmost freedom. I have never seen any untoward result beyond a disturbance of two or three days, except in one case of Addison's disease, that was apparently killed. Two days after injection the patient was dead.

DR. THEODORE C. JANEWAY, New York: I want to corroborate Dr. Shattuck's experience of rapid fatal issue in Addison's disease following injection of tuberculin for diagnostic purpose.

DR. HENRY KOPLIK, New York: I make use of the cutaneous Von Pirquet test in children almost routinely. As you all know, that is the test of preference, but in some cases in older children, wishing to confirm the diagnosis of tuberculosis where there were other conditions present, such as pleurisy with effusion, after the patient had improved and the temperature dropped and the patient has been well for a little while, I have had some very unpleasant experience in trying to confirm the test of Von Pirquet in making injections of old tuberculin. The temperature rose, the effusion increased and the little patients were quite ill. This is a very unpleasant thing to happen to a clinician after his patient has been apparently on the road to recovery.

DR. I. ADLER, New York: I want simply to state that I have had under observation now for two years a case of undoubted Addison's disease, a mild case that has been exclusively and continuously treated with tuberculin injections, beginning with very small doses, and now she is taking very large doses and has been perfectly well and clinically has been bettered by it.

DR. JOSEPH L. MILLER, Chicago: I believe the very conservative stand by Brown is to be very highly commended. Since the introduction of the simpler tuberculin tests, like the Von Pirquet, I believe there has been a great deal of harm and injustice done the patients by assuming that, inasmuch as they gave a positive Von Pirquet, it was necessary that they be sent away from home and treated as patients suffering with a severe form of tuberculosis, whereas, as a matter of fact, there was no clinical evidence that these cases were tuberculous.

DR. BROWN, closing: I would call attention to the fact that the most important group to-day is the masked tuberculosis. Treatment is not necessary in the non-tuberculous, it is not necessary in masked tuberculosis, but it is necessary in the tuberculosis which is either active or quiescent.

THE FAVORABLE INFLUENCE OF QUININE AND UREA HYDROCHLORIDE HYPODERMICALLY IN ACUTE PNEUMONIA.

DR. S. SOLIS-COHEN, Philadelphia: There is a tradition that quinine given early will abort an attack of lobar pneumonia. In an early experience of the writer's 60 gr. of quinine sulphate given in error in a period of six hours, beginning two hours after the initial chill, apparently acted in this manner. The revival of the quinine treatment of pneumonia by Galbraith in 1904 led the writer to employ the double hydrochloride of quinine and urea, with which he has had such favorable experience in the treatment of malaria. From 6 to 10 gm. according to effect, are given in from forty-eight to seventy-two hours. Cinchonism does not develop. Temperature and pulse fall gradually and proportionately, and respiration more rapidly, with a tendency to restoration of the normal pulse-respiration ratio. Blood-pressure remains stationary or increases; cough diminishes; breathing becomes relatively easy; delerium abates or disappears. Crisis does not occur. Termination is by lysis at about the ordinary time, five to eleven days.

Percussion and auscultation signs are uninfluenced. Involvement of new areas may take place during treatment, with return of symptoms, necessitating new injections. Pneumococcic empyema has occurred. The pathologic processes in the lung would thus appear

to evolve in the customary manner, unmodified by the treatment— which is apparently not germicidal and is without effect on tissue changes, but is chemical and antitoxic. Fresh air, water, saline infusions and symptomatic medication when needed were associated with the quinine treatment.

DISCUSSION.

Dr. F. P. Henry, Philadelphia: Two years prior to the time at which Dr. Cohen claims to have instituted the use of quinine in the treatment of pneumonia I was led to its use through an article by Petzold. I used the hydro-chloro-sulphate of quinine. I can corroborate all that Dr. Cohen says in favor of the method.

Dr. A. Jacobi, New York: I have used the double hydrochloride of quinine and urea a great deal, but have found that it frequently produced gangrene of the skin.

Dr. Cohen, closing: I am very glad to hear of Dr. Henry's favorable experience and shall take pleasure in the publication of my paper to give him credit for the priority which he deserves. In my early experience with the double salt of quinine in malaria sloughs and abscesses and failure to absorb were frequently encountered, but, under improved technic, these unfavorable results have been avoided. The skin must be painted with tincture of iodine, injection made deeply, and, in withdrawing the needle, not a drop must be allowed to fall upon the surface.

A PNEUMATOGRAPHIC STUDY OF THE RESPIRATORY IRREGULARITIES IN MENINGITIS.

Dr. Lewis A. Conner and Dr. Ralph G. Stillman: Forty-one cases of meningitis were studied graphically by means of the Marcy spinal-spring type of pneumatograph, one tube being placed about the upper part of the chest to record the thoracic movements and a second about the abdomen at a point midway between the ensiform cartilage and the umbilicus to register the movements of the diaphragm. In 30 cases of tuberculous meningitis respiratory disturbances occurred during some part of the illness and usually throughout the greater part of it. Among 11 non-tuberculous cases alterations in the respiratory rhythm were observed in all but 2 cases. The disturbances of respiratory rhythm in meningitis can be divided into three fairly distinct groups: (1) Type of Cheyne-Stokes; (2) Biot's "meningitic rhythm"; (3) an undulatory type. The Cheyne-Stokes type seen in infants and children with meningitis shows certain differences from that ordinarily seen in adults. Biot's type of breathing is characterized by constant irregularities in rate and force, by frequent occurrence of deep sighs, and by apneic pauses varying in length and occurring at irregular intervals. In the undulatory type there is a rhythmical variation in the force of the respirations, or in the tone of the respiratory muscles, or in both of these together without any periods of apnea. This undulatory type was observed at some time in almost every case. In 12 out of 41 cases it was the only type of disturbance noticed. In 23 cases (56%) Cheyne-Stokes breathing was observed. In 10 cases (25%) Biot's type was noticed at some time. In 6 cases both the Cheyne-Stokes and the Biot types were seen at different times. Because of its occurrence in almost every case of meningitis, and because it is often observed early in the disease, this symptom of disturbed respiratory rhythm is of very considerable diagnostic importance, especially in meningitis of the tuberculous type in which the onset is often slow and insidious.

DISCUSSION.

Henry Sewall, Denver, Colo.: Are you sure enough of your apparatus to consider it quantitatively reliable?

Dr. S. J. Meltzer, New York: Was there any difference between the diaphragmatic and abdominal breathing?

Dr. J. H. Musser, Philadelphia: Were there any controls in the experiments of breathing in children? We all know the remarkable tricks they play with their breathing apparatus when asleep and awake also.

Dr. Connor, closing: In answer to Dr. Sewall, I would say that while, of course, all these instruments are not sufficiently accurate to make them mathematically so, and we can't say we have measured them mathematically, nevertheless, they are very accurate in a general way. They show in case after case the same thing. By heightening or lessening the tension of the pneumatograph we can make some difference. By relaxing sufficiently one can understand that we could get no abdominal tracing at all, but when one gets familiar with the tension to be used, one can get in the same case at different times and under different conditions usually just about the same sized tracing. We used a great many controls in our work with children.

ABDOMINAL TENDERNESS WITH PAIN DUE TO THORACIC LESIONS.

Dr. Arthur R. Edwards, Chicago: I report two cases of severe, diffuse abdominal symptoms in pneumonia and in pericarditis, which completely simulated abdominal perforation or peritonitis, and in which operation disclosed no peritoneal lesion. In neither case was there the slightest symptom or sign or thoracic disease at the time of invasion. The pain was severe, early and diffuse; the tenderness was as marked on deep as on superficial palpation; and the abdominal rigidity was extreme. The usually available differential points were not helpful; the general symptoms, as severe toxemia, high fever, etc., which generally indicate a systemic infection rather than a local condition, were absent. In this thoracic pseudo-peritonitis or pseudo-perforative symptom-complex, the abdominal muscles may be spastic, the legs drawn up, the body rigid, and collapse may intervene. The invasion symptoms indicate operation, and no certain criterion exists at the onset. The majority of operated cases recover.

DISCUSSION.

Dr. J. P. C. Griffith, Philadelphia: Long ago, in 1896, in the first case I saw of this character, I slipped up on the diagnosis and since then I have continued to slip up. It has been my fortune to see a good many of these cases. I have reported five cases and have one unreported case. I agree entirely with Dr. Edwards that the diagnostic signs are not to be depended upon. I have seen cases which I had no doubt were pelvic, but they turned out thoracic. The only thing to do is to make pretty sure before doing operation.

Dr. F. P. Kinnicutt, New York: I think that Dr. Edwards has drawn attention to an important fact that we should all consider. We are all familiar with the mistakes of our surgical colleagues in cases of this kind. If we can wait, if the surgeon is not too insistent for immediate operation, we may obtain some information from examination of the blood. But often the symptoms are so impressive that the surgeon says it is necessary to operate at once.

Dr. H. U. Williams, Buffalo, N. Y.: In this connection I would like to suggest the importance of fluoroscopic examination of the chest, because you get signs of pneumonia which are perfectly evident with the fluoroscope before you get any physical signs.

DR. M. H. FUSSELL, Philadelphia: I suppose there is no one who believes more thoroughly than I in the grave importance, the absolute necessity, of an early operation in abdominal cases of the character simulated by all these cases of Dr. Edwards, and yet I never approach a case which appears to be abdominal without the greatest trepidation because of the mistakes I have made myself, and because of the mistakes I know others have made. There is no one symptom or set of symptoms which will enable us to make a diagnosis; it is the ensemble by which we come to our conclusion.

DR. JAMES TYSON, Philadelphia: I wish to come to the defense of the surgeon under the circumstances. In my early experiences it was the surgeon who suggusted delay, because of the well-known occurrence of such symptoms when there was no necessity for operation. Most of these cases occurred in children. Operation was deferred and the child apparently recovered, but some months later the child was operated on for appendicitis, and appendicitis was found, so that you can have the rule working both ways.

DR. A. JACOBI, New York: The surface abdominal pain is easily explained in such cases by the extensive connection of the pneumogastric nerve. Is there an anatomical connection which explains the intense visceral pain dependent upon thoracic diseases?

DR. J. A. CAPPS, Chicago: I would like to ask Dr. Edwards whether he found any sign of involvement of the diaphragm? I think there is evidence that the diaphragmatic pleura in these cases is involved.

DR. S. J. MELTZER, New York: I have seen a man dying of angina pectoris who had been treated by one of the best men in New York for gastric catarrh and gallstones. I have seen one patient who had been operated on when he had pneumonia which it did not take a very careful examination to discover, and he was in the hands of an excellent surgeon.

DR. HENRY SEWALL, Denver: Is abdominal pain ever noticed when the lesion is in the left lung?

DR. S. SOLIS-COHEN, Philadelphia: I wish to call attention to a case of pneumonia of the left lower lobe which had been mistaken for gastric ulcer because of vomiting of blood-streaked mucus, together with epigastric pain and tenderness. I first saw the patient after three days' illness and at this time there was no doubt of the diagnosis of pneumonia. Recently I have had three cases of pneumonia referred from the surgical to the medical ward, the patients having been sent to the surgical ward with the diagnosis of abdominal disease. The correct diagnosis of pneumonia was there made by the surgeons and the patients transferred.

DR. E. LIBMAN, New York: I would be in favor of having a fluoroscopic examination made before proceeding to operation in these doubtful cases.

DR. J. C. WILSON, Philadelphia: It must be borne in mind that the early signs of croupous pneumonia consist in impaired vesicular murmur and slightly tympanitic percussion resonance.

DR. EDWARDS, closing: In answer to Dr. Sewall's question, there was no diaphragmatic sign. Abdominal pain may be caused by lower lobe pneumonia on either side.

### CONJUGAL TABES DORSALIS.

DR. A. A. ESHNER, Philadelphia: Sometimes several members of a family develop tabes or paresis, sometimes husband and wife, sometimes in addition a second husband or wife, sometimes one or both parents together with one or more children. The association is not common, although probably more so than is apparent. When husband and wife suffer, the former generally is attacked first, the latter subsequently. A moderate number of cases have been recorded in the literature. I report two cases of conjugal tabes. In one the symptoms appeared in husband and wife at about the same time. No history of syphilis was elicited, although infection may have occurred. In the second case it was learned incidentally that the husband of a woman who was under treatment for tabes likewise presented symptoms of the same disease, although he insisted that there was nothing wrong with him and declined treatment; he gave a history of an initial lesion.

### ACUTE DILATATION OF THE STOMACH IN PNEUMONIA.

DR. M. H. FUSSELL, Philadelphia: Acute dilatation of the stomach is a real complication or sequel to pneumonia fraught with great danger to the patient, usually easily relieved and generally unrecognized. I have failed to find in any book an article which speaks of this syndrome in pneumonia. I have met with four typical cases, three within the last year, and one ill-defined case which forces me to believe that I, in common with others, have heretofore mistaken this condition for something else. I report in detail five cases of my own and refer to six cases from the literature, making eleven cases so far reported. In cases which have come to autopsy there has been found constriction of the duodenum at the root of the mesentery. The question as to which is primary, the duodenal obstruction or the dilated stomach, is still undecided. I believe that in these penumonia cases there is an involvement of the innervation leading to dilatation, this dilatation in itself causing by traction a constriction of the duodenum. Unquestionably there are some cases with chronic dilatation which develop acute symptoms, but they are in marked minority. When one has met and recognized a case of acute dilatation, he is not apt to be misled by any case which occurs. The symptoms and physical signs are vomiting, abdominal pain, distention due to enlarged stomach, constipation, collapse, splashing sounds, and peristaltic movement over the stomach. Before the patient is moribund, often before a definite diagnosis has been made, and as a diagnostic step, a stomach tube must be inserted and lavage practiced. This brings great relief and, if dilatation has occurred after the crisis, recovery is almost certain to occur. Lavage must be done as often as distention occurs. When the patient is in collapse it is feared that passage of the tube may be fatal. This is a mistake, for the tube is easily passed and relief is marked. By turning the patient upon his side or abdomen the constriction of the duodenum is relieved. Food and drink must be interdicted. Strychnia and eserin are of value.

### DISCUSSION.

DR. C. G. STOCKTON, Buffalo: The most striking case that I have ever seen occur was one of acute dilatation in a child of nine years. The size of the stomach was unbelievable. It was undoubtedly acute. I think that dilatation does occur in pneumonia more than we realize. I have seen it in two other cases of pneumonia.

DR. C. N. B. CAMAC, New York: It has been suggested, and some of the autopsies tend to support that idea, that the dilatation may possibly be brought on by involvement of one or the other vagus, by mediastinal exudate associated with pneumonia. In some of the cases there was at autopsy very extensive dilatation. It was almost altogether in lower lobe pneumonia.

DR. S. J. MELTZER, New York: Pneumonia produces very often a dyspnea and very often frequent swallowing without any saliva. It is possible that the presence of air thus swallowed may be a factor in the production of dilatation.

### COMPARATIVE TOXICITY OF VARIOUS ALCOHOLIC BEVERAGES.

Dr. Julius Friedenwald, Baltimore, Md.: The plan followed was that of intravenous injection introduced by Daremberg. Rabbits weighing 2 kg. were utilized; the injections were made in the ear veins. Various brands of whisky, brandy and other alcoholic beverages were utilized. It was demonstrated that pure alcohol is less toxic than inferior whisky, and good whisky less toxic than inferior whisky, but more toxic than pure alcohol. Brandy was observed to be more toxic than alcohol or whisky, and genuine brandy just as toxic as ordinary brandy. Rum was shown to be more toxic than alcohol, whisky or brandy, and gin more toxic than pure alcohol. Liqueurs are more toxic than pure alcohol, whisky or brandy, and just as toxic as rum. Beer is but slightly more toxic than pure alcohol, and ale is no more toxic than beer, but more toxic than pure alcohol. Wine is more toxic than alcohol or whisky, and red wines are more toxic than white wines.

#### DISCUSSION.

Dr. G. M. Kober, Washington, D. C.: Did Dr. Friedenwald estimate the amount of fusel oil present before injecting? My impression is that whenever the amount of fusel oil exceeds 1 part to 1,000 it is toxic.

Dr. Victor C. Vaughan, Ann Arbor, Mich.: I would like to express my admiration for Dr. Friedenwald's paper, but I am afraid wrong conclusions will be drawn from it. Because a substance proves poisonous when introduced intravenously does not say that it will prove poisonous when given by the stomach. I do not think his investigations have taken into account this relative toxicity.

Dr. Fiedenwald, closing: I did not estimate the amount of fusel oil before the injection. It is difficult of course to draw any conclusion from a small number of experiments of this kind. This was a little bit of work done by experiments on rabbits to determine the pathological effect of alcohol on rabbits.

### CONCERNING THE CONTROL OF EPIDEMIC POLIOMYELITIS.

Dr. Simon Flexner and Dr. Paul F. Clark, New York: We are confronted in this country with the danger of another epidemic and possibly of repeated epidemics of poliomyelitis, toward which possibility the medical profession will need to be forearmed. The rapid growth in knowledge concerning this disease within a year or two, since and because of its successful transmission to animals, provides a basis for carrying out efforts at prevention of the malady, and affords an outlook in respect to an efficient mode of treatment. At present the chief reliance must be placed upon preventive methods, and these are to be based upon accurate knowledge now available and not deferred until more knowledge may be secured. It should be accepted as a fact that epidemic poliomyelitis is a contagious infectious disease, the cause of which can enter the brain and spinal cord by way of the nasopharyngeal mucosa and can, also, be eliminated from the nervous system by this membrane. Attention should be directed toward proper isolation of cases of epidemic poliomyelitis, to the disinfection of the nasal and buccal secretions, to the proper supervision of nurses and other healthy persons coming in contact with the ill, since such persons have been shown to be carriers of the infection, and to the recognition and control of the slight and abortive cases of the malady from which further extension may be feared. That insects may be passive carriers of the infectious agent we have recently proved in respect to contaminated flies. That an antiserum for the virus of poliomyelitis can be secured is now established, but thus far no antiserum has been prepared that is suitable for therapeutic use. Whether or not one will be produced in the future cannot be foretold. The quest, however, is not particularly encouraging at the moment. On the other hand, we have ascertained that the drug hexamethylene tetramin, or urotropin, possess a certain power of neutralization of the virus of poliomyelitis in monkeys, and we have further discovered that this power can be enhanced by chemical modification of this drug. Whether the problem of the treatment of the disease is to be solved along this line of investigation cannot, of course, be predicted, but the outlook is distinctly hopeful.

#### DISCUSSION.

Dr. L. A. Connor, New York: Dr. Flexner, have you any suggestions to make as to the preventive management of the nasophryngeal mucous membrane?

Dr. Flexner: I have assumed that the disease ought to be dealt with now in the manner with which we deal with epidemic cerebrospinal meningitis. We know a number of simple substances which are aseptic disinfectants for the virus. A very good one is menthol. I think it is a virus which is sufficiently readily injured by means of disinfectants, which are mild enough to be employed. If you consider it a proper and safe measure to use disinfectant solutions in atomizers it could be carried out in that way. We have great faith in cleanliness of the nose, of the hands, of the clothes. I mean by that to keep them free from the secretion. The virus has never been found in the secretions of the nose of human beings, but the number of observations is very small. It is extremely difficult to get secretions from the human nose. We have had the best specialist in New York come to help us to get the secretion from the nose and failed.

Dr. F. P. Kinnicutt, New York: I would like to know the probability of the disease being contagious. Has Dr. Flexner any particular method of disinfection of clothing? Is it possible for any information to be given us in regard to the mode of using urotropin? If we are going to have more of the disease during the summer, it is rather important that all information in regard to methods should be given us.

Dr. Flexner: I think the problem of disinfection is not peculiar. I think I should deal with it as one deals with any of the fairly highly contagious diseases. The reason I have suppressed the precise information about these compounds is that we have probably thirty of them now under comparison and we are going to choose the best one and it would not be fair to say which that is likely to be now, because we do not know; the point is that it is a possible line of advance.

Dr. M. H. Fussell, Philadelphia: When should we begin to use urotropin?

Dr. Flexner: I do not think you could begin to use urotropin too early.

### TWO CASES OF LEUKEMIA WITH DISEASE OF THE GUMS.

Dr. Henry Jackson, Boston, Mass.: The two cases reported are of especial interest in that the chief symptoms in each case was due to disease localized in the gums. The gums were much thickened, measuring one inch in cross section; along the edge was superficial ulceration, and the gums bled easily when touched. Both cases were considered as some local disturbance of the gums and mouth until the blood examination made the diagnosis possible. The first case is one of acute lymphatic leukemia. As the glands were not enlarged in the first part of the disease this case suggests that the cause of the leukemia is to be sought in the

bone marrow rather than in a disturbed function of the lymphatic glands. This supposition is further substantiated in that though most of the cells were typical large lymphocytes, some of the cells were very similar to myelocytes, as granules were present in the cell substance. The second case was a man thirty-six years of age; a dentist. December, 1910, swelling of submaxillary glands, soon followed by swelling of the cervical glands and gums; gums tender, hemorrhage; chief complaint great weakness. He was admitted to my ward with a diagnosis of scurvy. In this case the first impression of the stained specimen suggested an acute lymphatic leukemia, but the granules showed the cells to be abnormal myelocytes.

DISCUSSION.

DR. R. C. CABOT, Boston: It seems to me we have more difficulties as years go on in a fair demarcation of the clinical picture of acute lymphoid leukemia from the clinical point of view. It has always been an occasional stumbling block that certain cases of whooping-cough have such an enormous number of lymphocytes and there are several instances of supposed leukemias reported recovered which were obviously whooping-cough. There is another difficulty, namely, a septic lymphocytosis.

DR. HENRY KOPLIK, New York: Mention has been made of a condition of lymphocytosis after pertussis. Most men working among children feel that the blood picture in children can scarcely be compared with that of the adult. Anemias in children so closely simulate leukemias in the adult that one must be cautious in speaking of lymphatic leukemia.

A CASE OF SO-CALLED LEUKANEMIA.

DR. W. F. HAMILTON, Montreal: The patient, a farmer, aged forty-three, previously healthy, noticed a mass below the left costal border, which increased in size; he lost appetite, weight and strength and grew pale. Examination showed a spleen which reached down to Poupart's ligament, the liver was 2½ inches below the costal margin in the nipple line. There was no ascites or glandular enlargement. The leucocytes numbered 5,600 and myelocytes were present. The polymorphonuclear cells were diminished while the lymphocytes and large mononuclear cells were greatly increased. The hemoglobin was 65% and the red cells 3,150,000. Death occurred about two and one-half years after onset. No autopsy was made. This case was really one of atypical leukemia. The term leukanemia might well be discarded.

DISCUSSION.

DR. R. C. CABOT, Boston: What were the clinical features of the case aside from the blood?

DR. W. B. JAMES, New York: I wonder how many of the members of the Association feel perfectly satisfied with the recognition of such cases as this and those described as acute lymphatic leukemia as a distinct morbid entity? The term "leukanaemia" implies the ordinary lymphatic leukemia. In the cases of this kind I have seen I have not felt at all sure that the disease I was studying was really of that particular type, that is, of the type of lymphatic leukemia or leukocythemia. Surely the fact that the cases go on to a fatal termination ought not to be used by us in our classification.

DR. HAMILTON: In reply to Dr. Cabot's query, the clinical features were those of weakness, a slight pallor, no fever, moderately increased pulse rate, no edema, an enormously large abdomen and a very greatly enlarged spleen over which one could feel to and fro movements. There was ascites, no pain or tenderness over the long bones. The peripheral lymph glands were not enlarged. The patient was in the hospital for four weeks and subject to x-rays and made little or no improvement.

THE POSSIBLE PREVENTION OF PNEUMOCOCCUS EMPYEMA BY UROTROPIN.

DR. FREDERICK C. SHATTUCK, Boston: The lethal action of urotropin on the typhoid bacillus in urine, the general permeation of the body by this drug and the general delicacy of the pneumococcus, suggested that possibly empyema might be wholly or partly prevented as a sequel of pneumonia by the routine administration of the drug. Thus it has been used for the past year in nearly all the cases of pneumonia in my service in the Massachusetts General Hospital and in some of those of my colleague, Dr. Gannett. The drug was given as the diagnosis was established, in doses of 10 gr., three times a day and continued into convalescence. In 3 out of 59 cases taking urotropin in this manner, empyema developed. During the same period, 46 cases were treated without urotropin, only 1 developing empyema. In the preceding year, of 142 cases of pneumonia without urotropin, 3 developed empyema.

Dr. Barker, kindly complied with my request to try the treatment at the Johns Hopkins. Of 34 cases treated with urotropin, 6 developed empyema. Of 35 cases in the previous year without urotropin, 1 developed empyema. Dr. Kinnicutt also has kindly collaborated at the Presbyterian Hospital in New York. Of 19 pneumonia cases taking urotropin, 1 had empyema. Of 193 without the drug, 5 had empyema. These figures seem to show that this remedy is in no sense a preventive of empyema following pneumonia. It is interesting and may be important to note that neither in the Massachusetts General nor the Presbyterian hospitals did pericarditis develop in any case taking urotropin, although it was noted in 4 to 5% at the Massachusetts and in 1.5% at the Presbyterian in those not taking the drug. Furthermore, the Massachusetts' records show that otitis media occurred in about 4% of the non-urotropin cases, in no instance in the urotropin series.

*(To be continued.)*

## Book Review.

*State Registration for Nurses.* By LOUIE CROFT BOYD, R.N. Philadelphia and London: W. B. Saunders Company. 1911.

This monograph consists of a compilation and comparative summary of the laws governing the registration of nurses in the various states of the Union. These data are presented in several tables, dealing respectively with State Boards of Nurse Examiners, with registration requirements, with fees for registration and their disposition, with exemptions and restrictions, with penalties for violation of the laws, with grounds for revocation of license, and with reciprocity, the recording of certificates and compulsory laws. There is appended an excellent bibliography of the subject, which, with the statistics given, should make this publication of value to all interested in the profession of nursing and its legal status.

THE BOSTON
# Medical and Surgical Journal.

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101 TREMONT STREET, BOSTON, MASS.

## ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY.

THE annual meeting of The Massachusetts Medical Society, held in Boston on June 13 and 14, marked the celebration of the one hundred and thirtieth anniversary of the organization, which is, with the single exception of the New Jersey Medical Society, the oldest association of its kind in the country. The weather on both days of the meeting was delightful. On Tuesday morning, June 13, there were specially arranged clinics at the Massachusetts General Hospital and at the Boston City Hospital, and on the afternoon of this day the Fellows of the Society were invited by the Faculty of Tufts College Medical School to afternoon tea and demonstrations at the school building. At the Harvard Medical School there were exhibits and demonstrations by the several departments. There was also established in the Administration Building an efficient Bureau of Information, for which, and for its ability in managing the complex machinery of the meeting, great credit is due to the committee of arrangements.

The meetings of the several sections were held on June 13 at the Harvard Medical School. At the Councillors' meeting held at noon on Tuesday, Dr. George B. Shattuck, of Boston, was re-elected president of the Society for the ensuing year. Dr. Ernest S. Jack, of Melrose, was elected vice-president; and Dr. Walter L. Burrage, of Boston, Dr. Edward M. Buckingham, of Boston, and Dr. Edwin H. Brigham, of Brookline, were re-elected secretary, treasurer and librarian, respectively.

In the evening of June 13, at the Boston Medical Library, Dr. Richard C. Cabot, of Boston, delivered the annual Shattuck Lecture, under the title "Observations Regarding the Relative Frequency of the Different Diseases Prevalent in Boston and Vicinity." He spoke particularly of the relation of alcoholism to other diseases, and defined certain standards of intemperance and of temperance in the use of alcohol and of tobacco.

On Wednesday morning, June 14, was held the annual meeting of the Society. At noon the Annual Discourse was delivered by Dr. Maurice H. Richardson, of Boston, who emphasized the diagnostic value and therapeutic importance of early exploratory laparotomy, particularly in obscure conditions in the epigastric and right hypochondriac regions. This Discourse, the Shattuck Lecture, and the several papers, together with a full report of the proceedings and of the discussions at the section meetings, will be published in later issues of the JOURNAL.

The annual dinner of the Society, at Symphony Hall, was attractively served and was attended by over 1,160 members. During its progress there was most excellent singing by the Doctors' Chorus, which received deservedly hearty applause. Dr. George B. Shattuck presided at the dinner, and introduced the speakers. Governor Foss spoke of the peculiar opportunities of the medical profession for public service, and of the particular present necessity for such service as only physicians can render. The Rev. Mr. E. H. Rousmanière emphasized the importance of reserve power in the practise of medicine, and declared that the good physician, even more than the clergyman, should live in the realization of the invisible, in the faith which is "the substance of things hoped for, the evidence of things not seen." Mr. Arthur D. Hill commented pleasantly on the relations of the medical and of the legal professions, and explained their fundamental unity of purpose as a common effort for the determination of truth.

Following the adjournment from dinner the Annual Outing of the Society was held on the grounds of the Chestnut Hill Golf Club. Baseball games had been arranged between teams representing the different districts, and a number of exciting games were played and were equally enjoyed by participants and by spectators. The cup was won by the nine representing the Norfolk District Society.

Contrasted with larger assemblies, such as those of the American or of the British Medical Association, the meeting of the Massachusetts Medical Society does not suffer by the comparison. For it represents, on an even more intimate though on

a smaller scale, the close personal fellowship of the members of our profession, their unity of purpose and interests, their common zeal in a great cause. The warmth of this association was well evidenced by the recent meeting, to which was added the further interest of a notable anniversary in the history of an organization whose honorable years cause it to deserve and to receive from its members an ever increasing loyalty.

## THE WESSON MATERNITY HOSPITAL.

THE Wesson Maternity Hospital, at Springfield, Mass., is unique in this state as a lying-in hospital, equipped with the best of modern appliances, to which any reputable physician may send his private patients and where he may attend them with all the advantages and conveniences of such an institution. The importance of such surroundings to both patient and physician can hardly be over-estimated or over-emphasized. The hospital was built, furnished and equipped with a bequest of two hundred thousand dollars from Daniel Baird Wesson, of which some six thousand dollars remained with all obligations paid. Mr. Wesson also provided an endowment of two hundred thousand dollars. The late Mr. Bertrand E. Taylor, of Boston, was the architect. The work was in the hands of a building committee, all physicians but one.

The buildings occupy three sides of a quadrangle. The Maternity is entirely of stone, brick, iron, concrete and terraza with no wood except doors, which have plain surface of polished wood with no panels. The floors are laid on concrete arches. There are no door or window casings, simply the frames, which are flush with the plastering, as are the covered baseboards.

The walls are oil painted, with a dull finish, except in the delivery and operating rooms, where they are white enamel above the marble sides. The heating is all from stack rooms in the basement with fresh-air supply under control. The ventilating is by the suction method, high-pressure steam stacks being in compartments above the roof which connect with every room, corridor and toilet. Each room has a bath and toilet not opening directly, but by a connecting corridor. A number of rooms have private balconies and the main corridor on each floor terminates in a large sun room. There is a solarium on the roof, thirty by fifty feet, half enclosed by glass and half open under an awning. Every room has a telephone connection with every part of the hospital and also with the outside public service. A large electric elevator runs from basement to roof. Each floor has a diet kitchen with steam and gas heaters, refrigerator and water filter. Each floor also has its own nursery.

The large and well-equipped operating and delivery rooms are on the third floor, and, with the sterilizing room and physicians' lounging, bath and dressing rooms, are cut off from the rest of the floor. All the furniture and fixtures are of special design and selection, of fine material and finish, but with plain surfaces with no dust-catching ornamentation.

The domestic building has in the basement the boiler room which furnishes the high and low pressure steam and hot water. A private electric lighting plant is now being installed. The first floor is occupied by the kitchen and refrigerators. On the second floor is the laundry fully equipped and the machinery all run by electric motors. The third floor contains servants' sleeping rooms.

The Nurses' Home forms the third side of the quadrangle and contains a parlor, dining room for nurses, a private dining room for superintendent and physicians, a lecture hall and sleeping rooms, mostly single. The buildings are all connected by a two-story corridor with an open deck above. The location, while near the center of the city, is on high ground and so situated as to give abundant air and sunshine.

The hospital has no staff, each patient employing and paying her own physician. There is a provision whereby a physician may enter a case in the wards free of charge, but must also assume her care without fee. The prices charged are from twelve to fifteen dollars a week in the several wards and from twenty to thirty-five dollars a week for private rooms. The income from patients is such that only a part of the endowmeat income is required to meet expenses.

The hospital was opened to receive patients on Dec. 1, 1908, and the first case was admitted on the following day. On June 13, 1911, the thousandth delivery in the hospital took place. Of the babies born there, there have thus far been nine cases of twins and one case of triplets. A recent item in the Springfield *Daily Republican* gives the following additional information in regard to the training school:

"The hospital has lately bought and refitted the cottage at the corner of Hugh and Myrtle streets for nurses' rooms, as the nurses' home has long been insufficient.

"The nursing force consists of three head nurses who are permanent and twenty-five or

more nurses who have had at least eighteen months' training in a general hospital and come here for four months' training in maternity work.

"Besides the practical service, they are given a regular course of class work and recitations by the superintendent, lectures by appointed physicians and a final written examination, which, if successful, gives the diploma and a right to wear the hospital badge. The nurses at present come from the Springfield Hospital, Wesson Memorial Hospital, Massachusetts General Hospital and Bridgeport Hospital Training Schools. The Boston City Hospital and several others in New England have made formal application that their nurses be received for training."

The Wesson Maternity Hospital, therefore, has an educational function in the community. But not only does it train nurses in the care of obstetric cases; it also and primarily affords to patients of moderate as well as to those of comfortable means an opportunity to obtain at actual cost the conveniences and advantages of the most modern hospital environment. It is in this respect a model of a type of institution of which more are needed in this community.

## THE CELEBRATION AND SEQUELÆ OF PATRIOTIC HOLIDAYS.

During the local celebration, last week, of Bunker Hill Day, 25 persons were injured, more or less seriously, by explosives, as compared with 8 who were injured in the similar celebration a year ago; and there were in Boston 23 bell alarms for fire, as compared with 14 last year. These figures of unnecessary trauma and destruction of property indicate not an advance in rational methods of popular celebration, but a discreditable reversion to more barbaric customs.

In recent years there has been a growing agitation for more sensible observance of such patriotic holidays. The annual tale of conflagrations, gunshot wounds, and tetanus has gradually impressed many people with a realization of its really criminal wastefulness. Numerous statistics on this subject have been published. At the present, suffice it to recall that in the seven years from 1903 to 1909, inclusive, the total number of persons (chiefly children) reported to have been injured in the celebration of Independence Day in the United States was 34,603. Of these, 1,531 died of their injuries, an average of 219 a year. The total number of American soldiers who died of trauma in the war with Spain was 336. These figures represent the annual sacrifice made to injudicious patriotic enthusiasm, a sacrifice precisely analogous to that made to typhoid fever and other preventable diseases.

Last year it seemed that considerable progress had been made in the reduction of this needless destruction of life and property. In seventeen of the largest cities of the country there was in 1910 a reduction of over 65% in the number of casualties from those reported in 1907. It is to be hoped that the recent record of Bunker Hill Day is not an evidence of backsliding in this respect, and that the celebration of the coming Fourth of July will show increasing sanity and self-control on the part of the American people.

Numerous papers and periodicals this year have joined in advocating more rational methods of celebration. The Russell Sage Foundation has sent to over one thousand cities literature giving statistics of Fourth-of-July injuries and suggesting a sensible program of observance. The Journal which has from year to year published editorials on the subject at this season, now re-emphasizes its attitude and calls the attention of physicians to their duty and possible power in promoting the reform. Moreover, it would urge not only prevention of injuries, but the use of the most efficient methods in their treatment. One of the most fatal elements in Fourth-of-July trauma is tetanus occurring as a sequela of blank-cartridge wounds. The marked reduction in the mortality of this disease has followed the more general prophylactic employment of antitetanic serum in conjunction with radical surgical exposure and cleanliness of the wound. The value and importance of this mode of procedure seem established. We wish particularly to recommend its adoption by every physician who has occasion to treat such cases during the coming Fourth of July.

## GENIUS, EUGENICS, AND DEGENERACY.

In a recent article in the London *Westminster Gazette*, Mr. J. A. Spender, pointing out some of the possible disadvantages of the new science of eugenics, calls renewed attention to the close and not altogehter discreditable relationship between genius and certain forms of so-called degeneracy.

"Where my eugenic friend goes wrong," he says, "is in failing to realize that a great many of the maladies which he calls degeneracy are just too much of the highly developed nervous system which is the special endowment of the gifted families.

"Overcharge the battery ever so little and genius becomes insanity; give one member of the family a volt too much and the delicate balance of physical and mental qualities on which sanity

depends is broken down. Extinguish the family and you will rid the world of some degenerates, but you will also and at the same time rob it of its most gifted men.

"My eugenist would never have let Cowper, Lamb, Coleridge, Stevenson, Keats, Ruskin, Henley or De Quincey see the light.

"The doctrine of heredity should never be forgotten by parents or remembered by children. To the first it is the assertion of their responsibility; to the second, a reminder of their helplessness."

Doubtless eugenics, completely applied in practise, would tend to eliminate genius and degeneracy. Whether this would be desirable, need not now be considered, for it is hardly conceivable that eugenics can or will ever be so applied. Genius may be defined as a bye-product of evolution. It is to be regarded as an abnormality, not as the perfect type towards which natural process is working. But though it is a form of variation which may prove destructive to the individual or to the family, its repeated occurrence through the ages has proved of immense value and service to humanity. The types that have perished have done their share in human advancement as well as those that have survived and are destined to persist and endure. Genius is prophetic as degeneracy is reversive. Both are cognate collateral experiments from the great laboratory of life.

## A BRITISH COMPLIMENT TO BOSTON.

AN editorial on "Medical Letter-Writing," in the issue of the *Lancet* for May 6, describes a work recently published by Dr. Joseph Collins, of New York, entitled "Letters to a Neurologist." This work consists of a series of communications, supposed to be addressed by patients to their physician, and of his answers thereto. It is an extension of the epistolary mode of treatment for nervous diseases advocated some years ago by Oppenheim, of Berlin, in his "Letters on Psychotherapeutics."

The reviewer in the *Lancet* evidently considers Dr. Collins's style at times a bit technical, for he says: "We presume that the audience to which the 'Letters' are meant to appeal is a medical audience, for some of the replies to patients are couched in language that must be, we should think, obscure to the public, *even in Boston*. 'We physicians speak of migraine as a nervous disorder of degeneracy or deviation. By thus designating it, we endeavor to indicate that it occurs in individuals whose evolutionary development has not been sufficiently harmonious to allow the different components of the finished product so to work in unison that the result is a symphony, emotional, intellectual, or physical.' What consolation this may convey to a particular sufferer, torn with pain, we do not pretend to conjecture."

It is hard to say whether these remarks should be taken rather as a criticism of Dr. Collins or as a tribute to the supposed high level of popular intellectual culture in Boston. Surely the literal and figurative meaning of the term "symphony" should be appreciated in Boston, if nowhere else. We are disposed to accept the *Lancet's* editorial as a compliment, and to remind our distinguished contemporary that in this respect, as in all others,

"Dies erit pregelida
Sinistra cum Bostonia."

## MEDICAL NOTES.

PLAGUE AND SMALLPOX AT AMOY. — Press dispatches from Amoy, China, report that during the fortnight ended June 16, there were in that city 7 deaths from smallpox and 83 from bubonic plague.

CORONATION HONOR FOR DR. OSLER. — Among the coronation honors announced at London this week is that of a baronetcy to be conferred on Dr. William Osler, Regius Professor of Medicine at the University of Oxford.

A PROLIFIC FAMILY. — Charles Garnett, who died on June 16, at Garnett Settlement, near St. John, N. B., was said to be the father, by one wife, of twenty-three children, all but two of whom are now living and well.

EXCESS OF WOMEN IN GREAT BRITIAN. — According to the recent British census, the excess of females over males in Great Britain is now 1,178,317. In this enumeration, however, soldiers and sailors abroad are not counted. If the laws governing the determination of sex were definitely understood, the reason might be found for the progressive increase in the proportion of women to men among civilized nations.

PHYSICIANS' FEES IN JAPAN. — An item in the *Orential Review* states that "the strict honesty" of the Japanese people makes it unnecessary for a doctor in Japan to ask payment for his services. "When he has finished his visit, a present is made to him of just as much as the patient can afford." Such a custom, even though it bring small fees, should relieve physicians in that

delectable land not only from the trouble of rendering accounts but also from the liability of suits for overcharging.

A Living Centenarian. — The Rev. William Rankin, who graduated from Williams College in 1831, celebrated, recently, the supposed one hundredth anniversary of his birth. He is said to be the oldest living alumnus of any college in the United States, and the only one who has lived to be a centenarian. College education does not seem to predispose to great longevity.

Three Centenarians. — Mrs. Sarah Ann Blunt, a negress who died last week at Brooklyn, N. Y., was locally reputed to have been born a slave in Maryland on Dec. 25, 1810. She is survived by one granddaughter.

Joseph Mercer, of Cambridge, Mass., died in that city last week at the supposed age of one hundred and one years. He was born in Montreal, P. Q., Canada, but early went to Arichat, Nova Scotia. Later he came to the United States, and had lived successively in Newton and Nonantum, Mass., at Providence, R. I., and at Somerville and Cambridge, Mass. He never smoked tobacco or drank alcoholic beverages, and to this abstinence ascribed his longevity and success in life. He is survived by his widow, by two sons, and by two daughters.

Mrs. Mary A. Smith, of West Poland, near Lewiston, Me., died last week, at the alleged age of one hundred and two years, in the same house where she was born and had always resided. She was said never to have seen a railroad train. She was a widow and childless. She had been a paralytic invalid for several years prior to her death.

Fines for Food Adulteration in Switzerland. — Fines for adulteration of foodstuffs vary widely in different communities, according to their financial status and local attitude towards the importance of pure food. A recent Swiss publication gives the following description of fines imposed in various districts of Switzerland:

"In one town the punishment for selling milk to which water has been added may be as high as $40 fine in addition to five months in prison. At another town, for the same negligence, in an instance in which the amount of extension was 5 or 6 per cent, the fine was $7.50 with an additional $3.75 for the costs of the analysis, which fell to the loser in the trial, and for unclean receptacles for sugar and other foods, forty cents. At Lausanne an unclean beer pump costs its owner $1 and twice as much for the tests of its cleanliness; the sale of wine sweetened with sugar is set down at $1; artificial wine for natural, $2; while 'moistened' wine, the moistening medium being water, may result in a fine of $2, and various debasements of the purity of brandy and cordials cost from $1 to $5, according to the seriousness of the offence. At Cossonay the magistrate records a fine of $2 against a dealer who permitted his cognac 'to become altered in specific gravity,' while at Nyon the sale of absinthe means $20 to $30 fine; the mere possession of foreign artificial wine, $2, which is likewise the penalty for false indication of the locality of imported wine."

## BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, June 6, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 85, scarlatina 26, typhoid fever 9, measles 156, smallpox 0, tuberculosis 76.

The death-rate of the reported deaths for the week ending June 6, 1911, was 15.97.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, June 17, 1911, was 208, against 196 the corresponding week of last year, showing an increase of 12 deaths, and making the death-rate for the week, 15.74. Of this number 104 were males and 104 were females; 199 were white and 9 colored; 133 were born in the United States, 72 in foreign countries and 3 unknown; 49 were of American parentage, 131 of foreign parentage and 28 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 50 cases and 2 deaths; scarlatina, 42 cases and 3 deaths; typhoid fever, 9 cases and 0 deaths; measles, 97 cases and 2 deaths; tuberculosis, 61 cases and 18 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 27, whooping cough 2, heart disease 26, bronchitis 0. There were 14 deaths from violent causes. The number of children who died under one year was 31; the number under five years, 51. The number of persons who died over sixty years of age was 69. The deaths in hospitals and public institutions were 86.

Meeting of Tufts Medical School Alumni. — The second annual meeting of the Tufts Medical School Alumni Club was held in Boston on June 13. Addresses were made by the Rev. Frederick W. Hamilton, LL.D., president of Tufts College, by Dr. Harold Williams, and by Dr. Frederic M. Briggs.

GRADUATION OF NURSES AT EVERETT. — The annual graduation exercises of the Whidden Memorial Hospital Nurses' Training School at Everett, Mass., were held in that town last week. Two pupil candidates received diplomas.

APPOINTMENT TO MASSACHUSETTS STATE BOARD OF HEALTH. — It was announced last week that the Governor has appointed C. Eugene McGillicuddy, of Worcester, Mass., as a member of the State Board of Health, in the place of the late Gerard C. Toby.

BEQUEST FOR A SCHOLARSHIP AT THE HARVARD MEDICAL SCHOOL. — The will of the late Frank Dunlop Frisbee, who died in Newton, Mass., on May 16, was filed last week at the Probate Court, East Cambridge, Mass. It contains a bequest making provision for the foundation at the Harvard Medical School of a scholarship, to be known as the Jesse F. Frisbee Scholarship, "to aid any poor but deserving student." One-sixth of the residue of the estate is given for the support of this endowment.

MILK AND OPIUM FINES IN BOSTON. — Before the Boston Municipal Court last week, fines amounting to a total of $160 were imposed on 12 dealers of this city for having in their possession milk that was below the standard required by law. Before the same court another dealer was fined $10 for having in his possession 12 ounces of opium. Several "drug dens" have been raided in this city during the past week, and a number of arrests made. The husband of a prisoner in the House of Detention was last week detected in the act of conveying morphine and cocaine to his wife while visiting her, and for this offense was fined $100.

HARVARD MEDICAL ALUMNI ASSOCIATION. — It is announced that by vote of the Council, the annual business meeting of the Harvard Medical Alumni Association will be held on Commencement Day, June 28, in Harvard 1 in the College Yard, Cambridge, at 12.30 P.M., immediately after the exercises in Sanders Theatre. The Spread will be held afterwards in Stoughton 1 and 2, as usual.

Members of the graduating class of 1911 of the Medical School are cordially invited to be the guests of the Association at the Spread and to make these rooms their headquarters on Commencement Day.

NEW YORK.

TWO GIFTS TO HOSPITALS. — Lispenard Stewart of New York, has made a gift of $25,000 to Roosevelt Hospital and given a similar amount to the New York Eye and Ear Infirmary, of whose board of directors he has for several years been president.

CORNELL MEDICAL COLLEGE COMMENCEMENT. — The thirteenth annual commencement of Cornell University Medical College was held on June 14, when there were fifty-three graduates, of whom eight were women. The resignation was announced of Dr. Rudolph A. Wittaus as professor of chemistry, toxicology and medical jurisprudence, a position which he had previously held in the medical school of New York University. Professor Wittaus was one of the founders of the Cornell Medical College and a member of its governing council, and he was presented by the faculty with a set of resolutions in grateful acknowledgement of his years of distinguished service in the institution and expressing regret at his retirement. He has now been made professor emeritus.

VITAL STATISTICS OF 1911 IN NEW YORK CITY. — In the quarterly report of the New York City Health Department, issued on June 14, a more favorable showing is made. While the actual number of deaths increased, as compared with the corresponding quarter of 1910, on account of the increase of population, there was a decline in the death-rate. The number of deaths reported in the first three months of 1911 was 20,876, as against 20,660 last year, but the death-rate was 17, as against 17.45. From the average rate of the corresponding quarter of the last five years, which was 18.33, there was a much more marked decrease. The number of births reported during the quarter was 34,506, an increase of 1,901 over 1910.

EARLY OUTBREAK OF CHOLERA. — Cholera has made its appearance early this season. During the voyage of the Italian Line steamship *Europa*, from Genoa and Naples, which arrived at quarantine on June 14, one of the steerage passengers had an attack of the disease, and was recovering by the time the ship reached port. The North German Llyod liner *Berlin*, which arrived the day previous from Naples, reported that four days after sailing a steerage passenger was seized with it and died thirty hours later. The ship's surgeon, Dr. Kliemann, and Dr. Sterzi Ippolito, the Royal Italian Health Commissioner, who was on the *Berlin*, agreed as to the diagnosis of Asiatic cholera, and later this was confirmed by bacteriologic tests; as was also the case with the *Europa's* passenger.

Hospital Fire Discipline. — The admirable discipline in case of fire which has been established in Bellevue Hospital was well shown recently, when a fire occurred at that institution. It broke out in a drying room on the top floor of a recently constructed pavilion, a six-story building constructed of brick, and the alarm was promptly given by one of the women nurses. Fire drills are held regularly twice a week at Bellevue, and although it required some half hour's effort to conquer the flames completely, the work was accomplished so quietly (the city fire department not being called in) that it is stated that the patients below the fifth floor were unaware that anything unusual was going on. Panic was entirely averted among those in wards nearest the conflagration, while in other wards the windows were closed to prevent the smell of smoke and music boxes were set playing to divert attention.

Mortality Statistics of 1911 in New York State. — In the latest number of the *Monthly Bulletin* of the State Department of Health it is stated that during the first four months of 1911 there were 53,400 deaths in New York State, as against 51,630 in the same period of 1910; the death-rate in each month exceeding that in the corresponding month of last year. In both years March had a mortality never before reached in any month except in March, 1904; the month of March in these three years being the only months in the records of the department in which the number of deaths exceeded 14,000. While in April of this year the decrease in deaths from March was 900, in 1910 this decrease was 1,300; showing that the causes of sickness and death which were so marked in the early months of both years have this season persisted longer into the Spring. In these four months last year influenza was reported as the direct cause of about 1,000 deaths; this year the number is 1,336. Of the diseases in which the mortality is affected by influenza the deaths from pulmonary tuberculosis were increased by 200, from pneumonia, by 400, from other acute respiratory diseases, by 60, from Bright's disease and other affections of the genito-urinary system, by 300, from diseases of the nervous system, by 300, and from diseases of the circulatory system, by over 800. The annual winter epidemic has therefore been one of exceptional severity this season, and, crediting the epidemic, of last season with 10,000 deaths, there is reason to believe that the current one, which began in December and reached its height in March, has thus far added to the mortality no less than 12,000 deaths. Smallpox is reported as having made its appearance in several localities, causing, as usual, a diversity of opinion regarding the diagnosis. A striking instance of the protective value of vaccination is shown at a hotel in the state where the forty regular boarders were recently exposed to the risk of contacting the disease. Thirty-seven of them, who had been successfully vaccinated, escaped infection, while the other three are now down with smallpox in the isolation hospital. The Health Department has just established a traveling library for the benefit of health officers. Believing that many of these officials throughout the state would welcome the privilege of studying some of the most instructive and up-to-date works on subjects relating to their duties as sanitary officers, the department has purchased a number of sets of such books and had them packed in boxes for loaning on request.

## Current Literature.

Medical Record.

June 10, 1911.

1. Einhorn, M. *Stretching of the Pylorus in Benign Stenosis.*
2. Williams, L. R. *Pollution of Harbor Water Used in the Free Floating Baths.*
3. *Hill, E. C. *"Carriers" in Relation to the Spread of Diphtheria.*
4. Starr, M. A. *Acute Psychosis, Due to Belladonna Poisoning.*
5. Plummer, H. E. *Possible Causes of Failure, Following the Use of Bacterial Vaccines and Antisera.*
6. Johnston, J. C. *Stokes-Adams Disease; The Status of Heart Block; Report of Cases.*
7. Kerr, Le G. *A Neglected Phase of the Prevention of Summer Gastro-enteric in Infants.*
8. Greely, H. *A Case of Pulmonary Tuberculosis, with Heart Displaced to Right Side.*

3. Hill sums up the conclusions of Chapin in regard to the epidemiology of diphtheria and reports an epidemic at an army post in New York State, in which his theories were tested. His conclusions agree with Chapin's, that carriers, missed cases and atypical or undiagnosed cases of diphtheria must be considered as of much more importance in the spread of the disease than fomites. House disinfection and quarantining healthy as well as sick inmates of a household is an unscientific method of controlling epidemics if no attention is paid to carriers.

[L. D. C.]

The Journal of the American Medical Association.

June 10, 1911

1. Summers, J. E. *The Possible Diagnosis and a Technic in Excision of a Chronic Indurated Ulcer of the Posterior Wall of the Stomach.*
2. Salar, E. M. *Definite Knowledge Obtained by Means of the X-Ray.*
3. Pope, C. *A Certain and Simple Method of Obtaining the Knee-Jerk.*
4. Jackson, D. E. *A Drum-Splitting Attachment for an Ordinary Kymographion.*
5. Bulkley, L. D. *The X-Ray Treatment of Ringworm of the Scalp.*
6. Meltzer, S. J. *The Present Status of Therapeutics and the Significance of Salvarsan.*

7. *ROBERTS, S. R. *Sambon's New Theory of Pellagra, and Its Application to Conditions in Georgia.*
8. *TALBOT, F. B. *A Directory for Wet-nurses. Its Experiences for Twelve Months.*
9. *FLEXNER, S., AND CLARK, P. F. *Contamination of the Fly with Poliomyelitis Virus.*
10. MILLER, A. *Hexamethylenamin. A Remedy for Common Colds.*
11. NUTT, J. J. *Tuberculous Joint Disease. Report of a Case Illustrating the Critical Watchfulness Demanded during Convalescence.*
12. BEAM, G. *Another Case of Sporotrichosis in Man.*

7. Roberts gives Sambon's new theory of the origin of pellagra as follows: "Pellagra is not due to the eating of maize, either sound or deteriorated. A blood-sucking fly, of the genus Simulium is, in all probability, the agent by which pellagra is conveyed." Roberts compares this theory with conditions in Georgia and says: "Georgia and Italy both have pellagra. The two have the same tropographical conditions. Pellagra originates in both territories along streams. Both countries have many Simulium flies."

8. Talbot's excellent article discribes clearly and in detail the method of establishment and the reasons for the success of a directory for wet-nurses. This most excellent and much-needed institution has been established in connection with the Massachusetts Infants' Asylum and a very rigid system of physical examination of the nurses is carried out. The following postal-card explains this scheme: "A directory for wet-nurses has been established at the hospital of the Massachusetts Infants' Asylum, Jamaica Plain. Wet-nurses may be obtained here at any time by paying a fee of ten dollars. The institution is not expected to make money and this fee is a nominal one to help pay expenses. The wet-nurses and their babies are examined physically by a physician; no one will be recommended with any signs of tuberculosis or syphilis. . . . An attempt is made to teach the mothers how to be cleanly, self-respecting and how to care for their babies. The Directory requests you to send to it any woman who desires to obtain a position as wet-nurse; she will be given board and lodgings free if she is a worthy person. In this way she will have an opportunity to remain with her baby and to get work. Further information can be obtained by telephoning the hospital."

9. Flexner and Clark report the following very interesting experiments on the question of the transmission of the virus of poliomyelitis. Laboratory-bred flies have been permitted to feed on the fresh spinal cord removed from monkeys inoculated with the virus of poliomyelitis and recently paralysed. After feeding, the flies are removed to a fresh receptacle from which certain numbers are removed at intervals, killed with ether, then comminuted with sand and extracted with saline solution, from which a bacteria-free filtrate was obtained by means of a Berkefeld filter. Two monkeys were injected intra-cerebrally with 3 ccm. of this filtrate; the first monkey with a filtrate prepared from seven flies which had lived on clean surroundings for twenty-four hours after having fed on spinal cord, and the second from ten flies forty-eight hours in clean surroundings. Both monkeys developed lesions which at autopsy were found to be typical of experimental poliomyelitis. The authors make this conservative statement. "The experiments recorded merely show that flies contaminated with the virus of poliomyelitis harbor the virus in a living and infectious state for at least forty-eight hours. They do not show that this is the limit of the period of survival and they throw no light on the question whether the virus is retained merely as a superficial contamination or whether it can survive in the gastro-intestinal tract." [E. H. R.]

## ANNALS OF SURGERY.

### May, 1911.

1. *JOPSON, J. H. *Recent Advances in Pulmonary Surgery.*
2. *COLEY, W. B. *Injury as a Causative Factor in Cancer.* (Concluded.)
3. *HAWKES, F. *Acute Ulcer Peritonitis in Typhoid Fever.*
4. PILCHER, P. M. *The Radical Cure of Femoral Hernia in the Aged.*
5. BRUCE, H. A. *Acute Diverticulitis.*
6. ROCKEY, A. E. *Appendicostomy to Safeguard the Excluded Colon in Lane's Operation for Chronic Intestinal Stasis.*
7. AXTELL, W. H. *Chylous Cysts of the Mesentery.*
8. SHOEMAKER, G. E. *Removal of the Ureter, with a Tuberculous Kidney.*
9. *STEWART, J. C. *Results of the Use of Moorhof Bone Plug in the Surgical Clinic of the University of Minnesota.*
10. DAVIS, J. S. *A Further Note on the Clinical Use of Scarlet Red and Its Component, Amido-Azotoluol, in Stimulating the Epithelization of Granulating Surfaces.*
11. JANEWAY, H. H. *An Improved Device for Transfusion.*

1. Jopson, after a brief review of the physiology of external respiration and a consideration of various apparatus used in thoracic surgery, discusses the treatment of wounds of the pleura and lung. Conservative measures may result in hemothorax, pressure pneumothorax, emphysema and empyema. The articles of Garré, Stuckey, v. Moeller, Wolf and Grassman are then analyzed. Jopson concludes that the leading indications for operation in penetrating wounds of the chest are: (1) A wound whose situation and direction renders likely penetration of the heart, pericardium or diaphragm; (2) severe primary or recurring hemorrhage, as shown by hemothorax, external bleeding or severe hemoptysis with threatened aspiration of blood into other lung; (3) secondary hemorrhage; (4) severe pneumothorax, especially with symptoms of mediastinal or cardiac displacement, dyspnea, cyanosis and suffocation not relieved by aspiration; also with extensive and increasing external emphysema; (5) secondary pneumothorax (suppuration or sloughing of lung tissue, v. Moeller); (6) empyema. Jopson gives epitomes of eight cases of chest wounds personally observed. He is convinced that too optimistic views in regard to chest wounds and an over-conservative attitude in their treatment will sooner or later lead us all into trouble.

2. Coley concludes his argument that injury is a causative factor in cancer. The medico-legal aspect of the question is first considered and three personal experiences given. Segond's five guarantees necessary to establish connection between injury and tumor are: (1) Authenticity of the trauma; (2) sufficient importance or severity of the trauma; (3) integrity of part prior to injury; (4) correspondence of tumor to exact site of injury; and (5) date of appearance of tumor not too remote from time of injury to be reasonably associated with it. Two more guarantees may be added, vis., the continuous presence of pathologic manifestations, such as pain, at site of injury up to time of appearance of tumor, and histologic verification of the cancer. The opinions of Thiem, Roepke, Ziegler, Gross, Carl, Lowenthal, Lieke, Wolf, Wild, Kirchner and Loewenstein are given. Coley then presents epitomes of 36 cases of carcinoma of the breast associated with antecedent injury and 49 cases of sarcoma of various tissues. He concludes from over 1,200 personal observations that, (1) local trauma of any kind, from chronic irritation to a single local contusion, is not infrequently the direct exciting cause of malignant tumors of all types; (2) a single local injury may cause a carcinoma as well as a sarcoma; and (3) legal liability cannot be admitted until principles and conditions very similar to, if not quite so exacting as, those of Segond are definitely established.

3. Hawkes believes that in a great many cases of typhoid ulcer peritonitis an early diagnosis can and should be made and that better methods should be adopted in order to give the patient the full benefit of such an earlier diagnosis. He lays great stress on the recognition of the very lightest shades of muscular rigidity which accompany the earliest stages of peritonitis. Abdominal tenderness is a less reliable sign; pain is regarded as a sequel of peritonitis rather than a precursor; dullness in the right flank is a valuable sign if present at an early period; rising blood pressure and leucocytosis may both be absent in the earliest stages. The differential diagnosis is considered (appendicitis, intra-intestinal hemorrhage, acute cholecystitis, right lower lobe pneumonia, right-sided pleurisy, extensive splenic infarction or inflammation, kidney

infarction, perinephritis, contusion and hemorrhage into abdominal muscles, distended bladder, costal periostitis, renal or ureteral colic, and suppurating mesenteric glands. Hawkes suggests a hospital with a skilled resident (salaried?) physician with previous ample experience in a large general hospital; a skilled resident (salaried?) surgeon of equal surgical experience; a "special night typhoid service" consisting of rounds made to all waking typhoids every two hours. Resident physician to be notified. In case of muscular rigidity or tenderness he can immediately summon the resident surgeon, who may be operating one or two hours from time of perforation. "Consent o operation should be obtained and recorded on admission in every case where symptoms are present suggestive of typhoid fever." In outside practice among the well-to-do the writer suggests that the practitioner secure the bedside attention of two recent hospital graduates, one for day and one for night duties from the beginning of the third week of the disease. The writer suggests that nurses during their training should be taught to detect the early stages of abdominal rigidity. In this way poorer patients, especially in country districts, would be more frequently saved. Hawkes believes that the presence of a light degree of muscular rigidity and tenderness in the right iliac fossa or right para-umbilical region justify operation. Histories of eleven cases personally operated are given. Hawkes believes that "an early exploratory operation exerts a distinctly beneficial influence, not only on the ulcers that may be about to break down, but on others as well, thus preventing their further progress toward separate perforations."

9. Stewart's experience with Moorhof bone wax differs from that of Simmons (*Annals of Surgery*, January, 1911). He uses it in defects left by removal of fragments in some compound fractures; in acute osteomyelitis as a temporary filling to avoid gauze packing and as a permanent stopper of the evacuated cavity; in all forms of subacute and chronic osteomyelitis, including bone abscess; in tuberculosis of both bones and joints; and in cavities made in healthy bone. He gets first intention in most cases of chronic and subacuate osteomyelitis and tubercular cases. He has never had the wax extruded. On the contrary, granulations have formed over wax which has been exposed by opening of the wound from cutting out of stitches or tension. Five cases are presented with x-rays of four. The period of absorption varies from six weeks to over a year. [T. W. H.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 20.

May 18, 1911

1. LANGE, J. *The Prophylaxis and Treatment of Scarlet Fever.* (Clinical Lecture.)
2. LOESCHKE, H. *Reciprocal Relations Between Lungs and Thorax in Emphysema.*
3. SCHUMBURG. *Tincture of Soap and Alcohol in Disinfection of Hands.*
4. HECHT, H. *Value of Antigen Extract.*
5. *ROSENTHAL, A. *On the Question of the Excretion of Diastatic Ferment in the Urine.*
6. LOEWY, A., AND COLMAN, J. *Primal, a new Harmless Preparation for Coloring the Hair.*
7. GOTTSCHALK, S. *Eusapyl in Gynecologic Practice.*
8. HOFFMANN, R. *Hay Fever Therapy.*
9. SCHERESCHEWSKY, J. *General Syphilitic Infection in the Rabbit by Intracardial Injection of Cultures.*
10. EFFENDI, M. *The Treatment of Pernicious Anemia.*
11. DREMO. *The Use of Water-Pressure Massage in the Different Medical Specialities.*
12. SCHERN, K. *Acid Determination and the Rennet Inhibiting Test of Milk.*
13. RABNOW. *Some Observations on the Status of the Tuberculosis Fight.*

5. Rosenthal has taken up the fact first mentioned by Cohnheim in 1863, that a diastatic ferment exists in the urine and endeavored to see if it is of value from a diagnostic point of view. He gives a short review of the literature on the subject. He concludes from his studies that although the amount of diastatic ferment may vary in the urine from time to time, the twenty-four-hour urine shows a fairly constant amount of this ferment, which is about 500%. In cases of diminished permeability of the kidney, as in diabetes insipidus and chronic interstitial nephritis, the excretion of this ferment is usually diminished. When the kidney shows increased permeability the ferment comes through and will often come through in cases which, under normal conditions, show no ferment in the urine. In diabetes mellitus the diastatic is nearly if not entirely wanting. [C. F., JR.]

DEUTSCHE ZEITSCHRIFT FÜR CHIRUGIE. BD. 109.

HEFT. 5–6. MAY, 1911.

1. *GROSS, H. *The Surgery and Pathology of the Diaphragm.*
2. *SHIMODAIRA, Y. *An Experimental Research Concerning Tubercular Infection of the Thyroid.*
3. BODE, E. *The Operability of Tumors of the Hypophysis.*
4. HEYDE, M. *Subcutaneous Fat Necrosis.*
5. COHN, M. *Incomplete Rupture of the Urinary Bladder.*
6. SALOMON, A. *The Treatment of Angioma and Nevi with Carbonic Acid Snow.*
7. *KOWAMURA, K. *The Experimental Production of Gastric Ulcer by Means of Nerve Injuries.*
8. *LAUENSTEIN, C. *A Further Contribution to the Question of "Two Loops of Intestine in a Strangulated Hernia."*
9. SASAKI, J. *The Treatment of Pseudo-Arthrosis by Means of the Injection of Periosteal Emulsion.*
10. ROLOFF. *A Case of Rupture of the Long Tendon of the Biceps.*
11. FABRICIUS. *Conservative Kidney Surgery.*

1. The author reviews the literature, which he notes is extremely scanty, of the pathology and surgery of the diaphragm, and reports three cases of his own. Two of these cases were tubercular abscesses of the diaphragm, both were operated on, with resection of a part of the diaphragm. Both recovered.

The third case, a fibrosarcoma of the diaphragm, lived for about six months, following an extensive resection of the diaphragm, and removal of the tumor.

2. The author, by an extremely careful review of the literature, shows that there is considerable doubt in the minds of many pathologists as to the possibility of a tubercular infection of the thyroid occurring.

He details a number of experimental injections into the thyroids of dogs, of both the bovine and the human tubercle bacillus, and reports positive findings at autopsy in a number of the cases. To show that the thyroid is not as susceptible to tubercular infection as other organs, he also injected the bacilli into the spleen, kidneys and testicles of other dogs, and showed that infection is more liable to occur in these other organs. He suggests that the lessened susceptibility of the thyroid to tubercular infection probably has to do, in some way, with its specific function.

7. Looking up this subject in the literature, the author divides the question into four groups, (*a*) lesions of the central nervous system, (*b*) lesions of the vagus nerve, (*c*) lesions of the sympathetic nerve, (*d*) simultaneous lesions of the vagus and sympathetic nerves. He found a surprising difference of opinion expressed as to the amount of damage caused to the stomach by injury to these various nerves, and accordingly instituted a series of experiments. He used both dogs and rabbits. Their stomach contents were examined before and after operation, and the animals were autopsied at varying intervals following the experiments.

The experiments and their results are tabulated as follows.

1. Injury to the vagus.

(*A*) Subdiaphragmatic double vagotomy.

The dogs showed no lesions in the stomach at any time following the operation. The rabbits showed occasional small changes.

(*B*) Subdiaphragmatic single vagotomy.

Dogs negative. Rabbits, one minute change.

(*C*) Both vagi tied off with silk ligatures.

Dogs no results. Rabbits few small changes.

2. Extirpation of the celiac plexus including the celiac ganglion.

Dogs no results. Rabbits, some marked changes.

3. Subdiagphragmatic double vagotomy, with simultaneous extirpation of the celiac plexus including the celiac ganglion.

No changes in either dogs or rabbits.

The stomachs were examined histologically and nothing found, and the author is forced to conclude that the question is not definitely settled as yet. He suggests that another series of experiments be undertaken using another kind of animal.

He found the HCl sometimes increased and sometimes decreased following the operation, in both kinds of animals used. [J. B. S., JR.]

## BERLINER KLINISCHE WOCHENSCHRIFT. No. 20.

### MAY 15, 1911.

1. BÜRGI, E. *Investigations on the Action of Drug Mixtures.*
2. *STADELMAN, E. *The Internal and Subcutaneous Use of Ouabain in Heart Disease.*
3. PICK, L. *Melanosis of the Mucous Membrane of the Colon.* (Conclusion.)
4. TOMASCZEWSKI, E. *The Inoculation of Apes with Malignant Syphilis.*
5. *THOMSEN, O., BOAS, H., HJORT, R., AND LESCHLY, W. *An Investigation of the Feeble-Minded, Epileptics, Blind and Deaf Mutes, of Denmark, with the Wassermann Reaction.*
6. REHBERG. *Fascia Transplantation.*
7. HECHT, H., AND KLAUSNER, E. *New Methods in the Treatment of Gonorrhea.*
8. FRANCHINI, G. *The Culture and Modes of Development of the Leishman-Donovan Bodies.*
9. STEPHAN, A. *Uric Acid Determinations, by Means of the Centrifuge.*
10. KÖLLNER. *The Diagnostic Significance of Acquired Disturbances of Color Vision.*

2. The author reports a number of heart cases treated with ouabain, an infusion decoction of acocanthera. The drug was given by mouth and subcutaneously. He claims that used internally it produces results equal to the other heart tonics and has the added advantage that it may be given subcutaneously without causing the intense pain and the skin reaction, which follows the subcutaneous use of digalen and strophanthine. At present the drug is extremely expensive. He remarks particularly on its marked diuretic action.

5. The figures of this interesting research in Denmark showed that of 2,061 weak-minded patients, only 31, or 1.5%, gave a positive Wassermann, and only 13 of this 31 showed any other taint of congenital syphilis. They conclude, therefore, that congenital syphilis plays only a small part in the production of idiocy among the Danes. Of the epileptics, only one out of 259 cases gave a positive Wassermann.

There were no positive reactions among the blind.

Of the 344 deaf and dumb examined, there were 3 positive reactions. None of these showed any other evidence of congenital syphilis.

The authors conclude, therefore, that syphilis plays no part in the production of the last three affections. [J. B. S., JR.]

## WIENER KLINISCHE WOCHENSCHRIFT. No. 14.

### APRIL 6, 1911.

1. *TAUAKA, Y. *Contributions to the Knowledge of Human Skin Pigmentation.*
2. ALBRECHT, H., AND WELLMANN, O. *The Lipoid of the Adrenal Cortex.*
3. HERZ, M. *The Psychic Etiology and Treatment of Arteriosclerosis.*
4. KROKIEWICZ, A. *Paroxysmal Hemoglobinuria.*
5. PURTSCHER, A. *Unilateral Complete Oculomotor Paralysis in an Infant.*
6. HOFMOKL, E. *The Law for Protection against Communicable Diseases.*

1. From an extensive microscopic pathologic study of abnormal pigmentation, the author concludes:

(*a*) That the epidermic and connective tissue cells can form pigment of themselves and independently of each other.

(*b*) That the branched pigmented cells of the epidermis are of pure epithelial origin.

(*c*) That the relation between pigmentation of the epidermis and of the cutis is variable.

(*d*) That excessive pigment in the epithelium is extruded from that of the skin, and then taken up by leucocytes and connective tissue.

(*e*) That further pigment distribution may take place by the lymphatics.

(*f*) That the chromatophores in the skin play no part in epidermal pigmentation. [R. M. G.]

### No. 15. APRIL 13, 1911.

1. PRIBRAM, E. *The Protective Powers of the Cells.*
2. SCHRUK, F. *The Reliability of the Peptone Demonstration as Collateral Reaction in Anaphylaxis.*
3. *CHIARI, O. M. *A Case of Extensive Tuberculosis of the Lymph Nodes.*
4. RITTEL-WILENKO, F. *The Diagnostic Value of the Demonstration of Tubercle Bacilli in the Feces.*
5. BENEDIKT, M. *The Treatment of Co-ordinative Occupation Neuroses and Autogymnastics in Chronic Cases of the Same.*
6. *V. POSCH, A. *Isolated Fractures of the Carpal Bones.*
7. MAYER, O. *The Question of Diseases of the Auditory Nerve and of the Labyrinth in Acquired Lues.*
8. HINTERBERGER, A. *The Inquiry into the Building Law Project in the Winter of 1910–11.*
9. WEISS, M. *Tuberculosis.*

3. Chiari's article is a contribution to the theory of the relations of lymph-node tuberculosis to Hodgkin's disease, based on a discussion of the case which he reports.

6. The author reports, with x-rays, two cases with isolated fracture of the carpal scaphoid and of the semilunar respectively. [R. M. G.]

### No. 16. APRIL 20, 1911.

1. *DOERR, R., AND MOLDOVAN, J. *The Action of Ultraviolet Light on the Albumin Antigen and Its Antibodies.* (First communication.)
2. ASCHOFF, L. *The Cholesterinesteremia of Pregnancy.*
3. *MÜLLER, R., AND SUESS, E. *Comparative Serologic Investigations in Tuberculosis and Syphilis.* (Second communication.)
4. KNOTHE, B. *Some Cases of Atoxyl Treatment of Tuberculosis.*
5. HOKE, E. *Investigations on the Poisonous Action of Typhus Exudates on the Circulation.*
6. TELEKSY, L. *The Difficulti s in the Verification of Official Morbidity Statistics.*
7. PFEIFFER, H. *Observations on the Work of F. Schenk on Anaphylactic Sera.*

1. The authors find that irradiation with ultraviolet light denatures the specific albumin bodies of native sera. In normal sera this change is manifested in the disappearance of the specific precipitability. In albumin antisera it disturbs the precipitating and passive anaphylacticising power. Irradiation of antigen and antibodies produces an artificial reduction of the rapidity of reaction.

3. The authors report a comparative study of the peptone reaction in tuberculosis, lues and leprosy. [R. M. G.]

### No. 17. APRIL 27, 1911.

1. *v. BÓKAY, J., VERMES, L., AND v. BÓKAY, Z. *The Curative Action of Salvarsan in the Lues of Childhood.*
2. BIERNACKI, E. *The Diagnosis and Pathogenesis of Gallstones.*
3. LUGER, A. *A Case of Epileptic Tetany.*
4. BERNHARDT, P. *A New Indicator for the Determination of Titratable Alkali in the Blood.*

1. The authors report, with excellent illustrations, a rather inconclusive series of twenty-seven cases of syphilis in childhood, treated with salvarsan. [R. M. G.]

### No. 18 MAY 4, 1911.

1. *DURIG, A. *Physiologic Effects of High Altitude.*
2. FLINKER, A. *The Pathogenesis of Cretinism.*
3. MAREK, R. *A Case of Tetany after Adrenalin Injections in Osteomalacia.*
4. KOLLER, E. *The Appearance of "Heart Failure Cells" in the Urine.*

5. Cattoretti, F. *The Meiostagmin Reaction in White Rats after Extirpation of Both Adrenals.*

1. The author reports an extensive and enthusiastic study of the physiologic phenomena of high altitudes. [R. M. G.]

No. 19. May 11, 1911.

1. *Hitschmann, F., and Cristopoletti, R. *The Pathology and Symptoms of Malignant Chorio-Epithelioma.* (To be concluded.)
2. *Grocco, P. *Vertebral and Left-Sided Paravertebral Liver Dullness.*
3. Gjorgjevíc, G. *Coincidence of Herpes Zoster and Psoriasis Vulgaris.*
4. Freund, L. *Light Injuries of the Skin and Means of Light Protection.*
5. Bauer, R. *The Technic of Phlebotomy and Intravenous Infusion.*

1. The authors collect from the literature and tabulate 94 autopsied cases of chorio-epithelioma, upon which they base an extensive pathologic and clinical study of the disease.

2. Grocco reports some new findings in his study of the auscultatory phenomena of the back. [R. M. G.]

Proceedings of the Royal Society of Medicine. No. 6.

Vol. IV. April, 1911.

1. Buxton, D. W. *The Use of Scopolamine, Morphine, Atropine and Similar Drugs by Hypodermic Injection Before Inhalation Anesthesia.*
2. Gore, W. R. *The Climatic and Balneological Treatment of Neurasthenia.*
3. Fletcher, H. M. (1) *Infantilism with Polyuria and Chronic Renal Disease.* (2) *Infantilism with Thyroid Inadequacy.* (Juvenile Myxedema.)
4. Rolleston, J. D. *Inherited Syphilis and "Blue Sclerotics."*
5. Batten, F. E. *Simple Atrophic Type of Myopathy.*
6. Heath, P. M. (1) *Syphilitic Osteitis of the Femur.* (2) *Deformity of the Cervical Spine.* (3) *Multiple Exostoses.*
7. Langmead, F. (1) *Case of Achondroplasia.* (2) *Myopathy.*
8. Williamson, O. K. *Secondary Optic Atrophy, due to a Cerebellar Tumor.*
9. *Forsyth, D. *The History of Infant Feeding, from Elizabethan Times.*
10. Milne, R. *Measles: Its Treatment and Prevention.*
11. Collier, J., and Mummery, J. P. L. *Tabes Dorsalis with Early Rectal Crises.*
12. Trotter, W. *Carcinoma of Thyroid.*
13. Godlee, R. J. *Two Unusual Cases of Thyroid Tumor.*
14. Pring, C. H., and Evans, E. *Graves' Disease.*
15. Guthrie, L. *Two Cases of Muscular Atrophy of the Peroneal Type in Father and Son.*
16. Hutchison, R. *Splenomegaly (Congenital Family Cholemia).*
17. Lediard, H. A. *Benign Cyst of the Tibia.*
18. Herringham, W. P. *Septic Gastritis.*
19. Hutchison, R. *Two Cases of Secondary Anemia Associated with Achylia.*
20. Evans, A. *A Subsequent Report on a Case of Excision of the Larynx, etc., for Malignant Disease.*
21. Adamson, H. G. *Two Cases of Adenoma Sebaceum in Mother and Son.*
22. Dore, S. E. (1) *Case for Diagnosis.* (2) *Monilithrix in a Male Child, Aged Sixteen Months.*
23. Fox, T. C. *Ichthyosis in a Child, Aged Sixteen Months, treated by Thyroid Extract.*
24. Little, E. G. G. (1) *Case for Diagnosis.* (2) *Nevi of Peculiar Appearance in a Girl, aged Twelve.*
25. MacLeod, J. M. H. *Keloids forming on the Cicatrices Resulting from Ulcerating Syphilitic Lesions.*
26. McDonagh, J. E. R. *Congenital Xanthoma.*
27. Sequeira, J. H. (1) *Mycosis Fungoides.* (2) *Alopecia of Acquired Syphilis in a Boy, aged Seven.* (3) *Lichen Planus of Unusual Distribution.*
28. Warner, F. A., and Fox, W. *Report on a Case for Diagnosis (Sarcoma Cutis).*
29. Wilson, E., and Wilson, W. H. *A New Induction Coil.*
30. Reid, A. D. *The Technic of Skiagraphy.*
31. Hamer, W. H. *Typhoid Carriers and Contact Infection.*
32. *International Congress of Laryngology, Berlin.*
33. Hobday, F. *Specimens of Equine Larynx.*
34. Watson-Williams, P. *Carcinoma of the Larynx.*
35. French, J. G. *Endothelioma of the Palate.*
36. Tilley, H. (1) *Portion of Rabbit-Bone Removed from Right Bronchus.* (2) *A Tooth Removed from the Floor of the Right Antrum.*
37. Kelson, W. H. *Tumor of Right Side of Neck, Involving the Pharynx.*
38. Pegler, L. H. (1) *Ulceration of the Pharynx, due to Pyorrhea.* (2) *Party-Wall Cancer of Larynx and Esophagus.*
39. McKenzie, D. (1) *Antrum Suppuration.* (2) *Cicatricial Obliteration of the Nasopharynx (Hereditary Syphilis).*
40. Lack, H. L. *Lupus Erythematosus of the Mucous Membrane of the Cheeks.*
41. Hastings, S. *A New Form of Burr, for Use in the Antral Operation by the Nasal Route.*
42. Kelson, W. H. *A New Form of Burr for use in the Radical Antral Operation by the Intranasal Route.*
43. Muecke, F. F. *Ventricular Voice in a Woman.*
44. Lewis, T. *The Electrocardiographic Method and Its Relationship to Clinical Medicine.*
45. West, S. *Case of Acute Suffocative Catarrh of Pneumococcal Origin.*
46. Maxwell, R. D. (1) *Thyroid Tissue in an Ovarian Embryoma.* (2) *Clinical History of a Case of Involution of an Ovarian Cyst, Associated with Vesicular Mole.*
47. Macnaughton-Jones, H. (1) *Hydrosalpinx with Ovarian and Peritoneal Cysts.* (2) *Hysterectomy, followed by Double Phlebitis.*
48. McIlroy, A. L. *A Demonstration on the Origin of the Follicle Cells of the Ovary.*
49. Bell, W. B. (1) *Primary Abdominal Pregnancy in a Rabbit.* (2) *The Nature of Hematocolpos Fluid.*
50. Mummery, J. H. *A Short Preliminary Note on the Distribution of the Nerve Fibers of the Dental Pulp.*
51. Morris, H. J., and McWilliam, A. *The Comparative Elasticity and Internal Structure of Cast and Rolled Gold Plate.*
52. Milligan, W. *Injuries of the External and Middle Ear.*
53. Ballance, C. A. *Injuries of the Middle and Internal Ear.*
53. Cheatle, A. H. *Fifteen Specimens of the Temporal Bone, showing Types of Fractures.*
54. Jenkins, G. J. *Specimens of Fractured Temporal Bone.*
55. Watson, C. G. *Resection of the Cecum and Ascending Colon.*
56. Coats, G., and Forbes, J. G. *On the Relation of the Meningococcus Intracellularis to Pseudoglioma.*
57. Dean, H. R. *Studies in Complement Fixation with Strains of Typhoid, Paratyphoid and Allied Organisms.*
58. Mankins, G. H. *Traumatic Myositis Ossificans.*
59. Bowlby, A. A. *The Formation of Bone in Periosteum Separated by Injury.*
60. Godlee, R. J. *Myositis Ossificans Traumatica.*
61. Berry, J. *Large Congenital Diverticulum of the Bladder, Treated by Resection.*
62. Fagge, C. H. *The Inginual Method of Radical Cure for Femoral Hernia.*
63. Brown, W. L. *An Inquiry into the Value of Rectal Feeding.*
64. Cow, D. *Reactions to Arteries to Certain Drugs.*

9. Forsyth presents an exceedingly interesting historical sketch of infant feeding, which must be read to be appreciated. [R. M. G.]

## Obituary.

### EDWARD SHIPPEN, M.D., U. S. N.

Dr. Edward Shippen, who died on June 16, at his country home, in Chestnut Hill, a suburb of Philadelphia, was born in New Jersey on June

18, 1826. He received the degree of A.B. from Princeton in 1845, and that of M.D. from the University of Pennsylvania in 1848. He immediately entered the United States Navy, and in April, 1849, was appointed an assistant surgeon. On April 26, 1861, he was appointed commanding surgeon, and in that capacity he served throughout the Civil War. He was on board the frigate *Congress* when it was destroyed by the *Merrimac*; on the *New Ironsides* at both battles of Fort Fisher; and in the squadron that defended Grant's right flank at Bermuda Hundred. After the war he saw considerable service in China and on the coasts of Africa and South America. He was for some time chief medical officer at the Naval Academy at Annapolis. He was on European station as fleet surgeon for four years, and for seven years was in charge of the United States Naval Hospital at Philadelphia. He was promoted to be medical director on March 17, 1876; he was retired in 1888; and in 1907 was given the rank of rear admiral. He was a companion of the Military Order of the Loyal Legion of the United States, and a fellow of the College of Physicians of Philadelphia. He was a frequent contributor to current magazines, and was well-known as the author of several popular books on naval topics.

## Miscellany.

### THE MASSACHUSETTS MEDICAL SOCIETY

#### ANNUAL MEETING OF THE COUNCIL.

THE annual meeting of the Council of The Massachusetts Medical Society was held in the Harvard Medical School, Boston, on June 13, 1911, at twelve o'clock noon, the president, Dr. George B. Shattuck, in the chair, and ninety-three Councillors present.

The treasurer, Dr. Buckingham, read his annual report, showing receipts, including the balance remaining in the treasury from last year, of $31,526.58, and expenditures amounting to $16-781.27, leaving a balance of $14,745.31.

The Committee on Membership and Finance reported through Dr. Goss, recommending that $4,500 of the balance in the treasury of the Society be distributed among the district societies and that nine members be placed on the retired list, the dues of seven remitted, and fifteen allowed to resign.

In accordance with the request of the president that the committee consider the question of the amount to be paid to our representative in the National Legislative Council and our delegate to the meeting of the Council on Medical Education of the American Medical Association for their expenses in attending the meetings of those bodies for the purpose of making recommendation to the Council, and having that body definitely fix the sum to be paid, the committee recommended that the remuneration of these representatives be on the same basis as that of the representatives of the Society in the House of Delegates of the American Medical Association.

Voted to accept the report and adopt its recommendations.

The report of the Committee on Medical Education was read by Dr. Ernst. Dr. Ernst gave notice that the committee will bring up the subject of medical education at length at the meeting of the council next October, as the time was too limited for a full discussion of the subject at the annual meeting. It was voted to accept the report.

Dr. Withington for the Committee on State and National Legislation presented a report of that committee, outlining the activities of the committee during the year. It was voted to accept the report and place it on file.

The Committee on the Assignment of Fellows to District Societies appointed at the last meeting made their report, through Dr. A. T. Cabot, as follows:

REPORT OF THE COMMITTEE.
APPOINTED BY VOTE OF THE COUNCIL, FEB. 1, 1911, TO CONSIDER THE ASSIGNMENT OF FELLOWS TO DISTRICT SOCIETIES.

IN 1875 the Suffolk District Medical Society requested that the Councillors should make "such a definition of the term 'reside,' as it occurs in Article xii of the By-Laws and Digest xii of the Acts, as shall in their judgment be just and equitable to all District Societies."

The Standing Committee on By-Laws of District Societies reported "that the term alluded to a 'legal' and not a professional residence; but it was recommended that, in view of a custom with respect to membership which had hitherto passed without challenge and without real detriment to any Society's interests, the most liberal interpretation be put upon the word in question and that Fellows whose position would be affected by a technical definition of the word be permitted to continue their relations with the District Society of which they have hitherto been counted members."

After discussion, this question of the exact definition of the word "reside" was recommitted to this Committee, who in 1876 reported that they were "unanimously agreed that the word 'reside' is invariably used in the sense of *legal* residence. They therefore recommend that this construction be put upon the word.

Since 1876 that ruling has been in force.

Soon after this a great change began in medical practice.

The specialization, which has constantly increased, has made it less necessary for many practising physicians to live in the midst of their patients.

Many Fellows, wishing their families to have the advantages of country life, have moved out of town while keeping their medical practice in town.

A considerable number of these cases, although coming under the rule, have been overlooked until quite recently, when an exact and proper application of the ruling of 1876 has had the effect of separating many Fellows from the districts in which they have always worked and in which they have acquired influence and usefulness.

Your Committee feel that this change in the habits of medical men has been so great that it is proper to reconsider the action taken by the Council in 1876.

In dividing the State into districts and in assigning Fellows to these districts the prime object was, and must be, to bring together into small units those Fellows who are best able to work together and to help each other towards the objects in which all are interested.

We are associated together for medical purposes, to labor for the health of the community and the improvement of ourselves and our Fellows.

In order that our organization may permit us to attain the fullest success in our efforts for medical progress, we feel that each Fellow should be assigned to the district where his medical activities are. He should be associated with the medical men with whom he is in the habit of working.

Only in this way can his full value of the profession and to the community be utilized. Only in this way can he get in fullest degree the benefits which he has the right to expect from association with his Fellows.

Of the men who have their residence in one district and their professional work in another, a considerable part have changed their residence late in life.

At a time when by education and experience they have attained their fullest value, they are by the present rules uprooted and torn away from the associations of their active life, and their power for good in the profession and the community is greatly curtailed and interfered with.

It seems to your Committee that this is an unnecessary loss of effectiveness.

It seems to us, further, that owing to the conditions of medical practice, aided by the telephone and motor car, the tendency of men to reside away from their place of practice will constantly increase, and that the present rule will work a hardship on an increasing number of Fellows and will curtail the usefulness of the Society in a corresponding and steadily growing degree.

Your Committee have also considered the effect that a more liberal plan of assignments to districts would have upon the District Societies, financially and otherwise. They feel that generally throughout the State the effect would be very nearly balanced, and work no hardship upon any district. In the vicinity of Boston the effect would be more felt and the Suffolk District Society would gain a considerable number of members at the expense of the outlying districts. We feel, however, that the liberal policy that the Suffolk District pursues in the matter of meetings — holding many meetings through the winter in conjunction with the Medical Library (to which the members of outlying districts are invited and where they are always welcome) — offsets this advantage and gives to the other districts greater benefits than they would be deprived of by any readjustment of membership.

Your Committee recommend, then, that the Constitution and By-Laws be amended as follows:

Sec. 5, Chap. 123, of Statutes of 1802, by inserting the words "or practising" after the word "residing" in the fifth line.

By-Law 9 (page 11, line 11), insert the words "or practising" after the word "residing."

Add to this By-Law the following: "Any Fellow wishing to change his membership from one District Society to another may petition the Council in writing to grant such change, stating his reasons therefor. Such petitions shall be referred to the Committee on Membership and Finance, who shall consider the petitions, shall consult with the officers of the two Districts involved in the change, and shall report recommendations to the Council. The Council shall decide by vote whether or not such petitions shall be granted."

Your Committee further recommend that the Committee on State and National Legislation present a petition to the General Court asking for the above change in the Constitution.

Respectfully submitted,

Arthur T. Cabot,
F. Robertson Sims.
Walter L. Burrage.

And it was moved and seconded that the report be accepted and its recommendations adopted.

On motion of Dr. E. B. Harvey the motion was amended as follows:

"Moved, that the report be accepted and the recommendations of the committee as far as the amendment of the By-Law is concerned be adopted. The motion was seconded by Dr. Gay and Dr. Gifford. Dr. A. T. Cabot said that the counsel of the society, Mr. A. D. Hill, had thought that it was wise to amend the charter, but if the entire society was unanimous that there is no need of so doing he was willing to accept Dr. Harvey's amendment. The president put the amended motion and it was adopted by a unanimous vote.

The report of the Librarian was read and accepted.

The Nominating Committee reported the following list of officers:

President, George B. Shattuck, Boston; Vice-President, Ernest S. Jack, Melrose; Secretary, Walter L. Burrage, Boston; Treasurer, Edward M. Buckingham, Boston; Librarian, Edwin H. Brigham, Brookline; and they were elected by ballot.

Dr. Walter E. Fernald, of Waverly, was chosen Orator for the annual meeting in 1912.

The following Standing Committees were appointed:

Of arrangements: G. H. Francis, A. N. Broughton, John Homans, Beth Vincent, W. W. Howell, J. D. Barney.

On Publications: O. F. Wadsworth, Geo. B. Shattuck, E. W. Taylor.

On Membership and Finance: F. W. Goss, Walter Ela, C. M. Green, A. Coolidge, Jr., Samuel Crowell.

To Procure Scientific Papers: T. J. Robinson, F. P. Denny.

On Ethics and Discipline: J. A. Gage, J. W. Bartol, Henry Jackson, G. deN. Hough, S. B. Woodward.

On Medical Diplomas: O. F. Rogers, H. W. Newhall, J. F. Burnham.

On Medical Education: H. C. Ernest, H. D. Arnold, C. H. Williams.

On State and National Legislation: G. E. Shattuck, C. F. Withington, F. G. Wheatley, W. P. Bowers, E. Flagg.

*Incidental business.* To fill the vacancy in the Board of Censors of the Bristol North District, it was voted that E. Washburn, of Taunton, be appointed; in Berkshire District, J. B. Thomes, of Pittsfield and in Hampden District, G. H. Janes, of Westfield.

To fill a vacancy in the Councillors of the Barnstable District, E. E. Hawes, of Barstable, was appointed.

To fill vacancies in the Delegates of the Massachusetts Medical Society to the American Medical Association, I. S. F. Dodd, of Pittsfield, was appointed in the place of Homer Gage and F. T. Murphy, of Boston, in place of O. J. Brown; Alternate Delegates, S. A. Mahoney, of Holyoke

in place of W. A. Dolan and R. I. Lee, of Boston in place of F. W. Anthony.

ANNUAL MEETING OF THE SOCIETY.

At the exercises of the first day of the annual meeting of the society held in the building of the Harvard Medical School, there was an attendance of about 400 fellows on Tuesday, June 13. The experiment was tried this year for the first time of having both morning and afternoon sessions of the medical and surgical sections. These were well attended as were the exhibits in the School. Officers of the sections for the ensuing year were elected by the sections as follows: Section of Surgery, Chairman, William N. Swift, New Bedford; Secretary, R. B. Osgood, Boston. Section of Medicine, Chairman, James M. Jackson, Boston; Secretary, David N. Blakely, Brookline. Section of Tuberculosis, Chairman, A. T. Cabot, Boston; Secretary, John B. Hawes, 2nd, Boston. Late in the afternoon, some 200 fellows attended the demonstrations and exhibits in the Tufts College Medical School, in spite of the inclement weather. The Shattuck Lecture was delivered in John Ware Hall of the Boston Medical Library at 8 P.M., by Dr. Richard C. Cabot of Boston, Subject: Observations Regarding the Relative Frequency of the Different Diseases Prevalent in Boston and Vicinity.

At the one hundred and thirtieth annual meeting of the society in the Harvard Medical School on Wednesday morning, June 14, under the presidency of Dr. George B. Shattuck, the secretary announced that 145 new members had been admitted during the past year, that one fellow had been restored to the privileges of fellowship, 55 deprived of these privileges, 30 had resigned and 42 died, leaving the membership on June 14, 1911, 3,361 fellows.

In response to a communication from the Trustees of the American Medical Association the following resolution was passed: Whereas, The Board of Trustees of the American Medical Association has requested an expression of opinion upon the subject of making in future all members of state societies ipso facto members of the American Medical Association, and in order that the board may make a satisfactory report to the House of Delegates of the national organization relating thereto, be it

Resolved: That as at the present time the Massachusetts Medical Society finds it impossible to devise a scheme whereby the desired object may be attained it respectfully reports to the Trustees of the American Medical Association that the proposition, as far as this state society is concerned, is inexpedient.

The findings and recommendations of the Board of Trial convened to try George W. Galvin of Boston on charges of advertising his method of practice, to wit, that he was guilty and that he be expelled from his membership of the Massachusetts Medical Society, were endorsed and approved by a unanimous vote.

Dr. A. T. Cabot offered the following amendment to the By-Laws:

By-Law 9 (page 11, line 11), insert the words "or practising" after the word "residing."

Add to this By-Law the following: "Any Fellow wishing to change his membership from one District Society to another may petition the Council in writing to grant such change, stating his reasons therefor. Such petitions shall be referred to the Committee on Membership and Finance, who shall consider the petitions, shall consult with the officers of the two Districts involved in the change, and shall report recommendations to the Council. The Council shall decide by vote whether or not such petitions shall be granted."

It was voted to submit the proposition to the next annual meeting of the Society for action.

Papers were read according to the program by Dr. G. W. Gay, W. J. Collins and E. H. Bradford, the last, illustrated by lantern slides being discussed by five members. The annual discourse was delivered by Dr. Maurice H. Richardson, of Boston, title, "The Present Position and Value of the Exploratory or Operative Diagnosis," and at 12.40 o'clock the society adjourned to Symphony Hall where dinner was served to about 1,135 persons. Following the dinner a large number of fellows attended the annual base ball games between nines from the different district societies at the Chestnut Hill Golf Club. The perpetual challenge cup was won by the nine from the Norfolk District.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 3, 1911

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | 1,334 | 411 | Waltham | 4 | 1 |
| Chicago | 546 | 152 | Brookline | 7 | 2 |
| Philadelphia | — | — | Chicopee | 6 | 2 |
| St. Louis | — | — | Gloucester | 1 | — |
| Baltimore | — | — | Medford | 3 | — |
| Cleveland | — | — | North Adams | 3 | 2 |
| Buffalo | — | — | Northampton | 6 | 0 |
| Pittsburg | — | — | Beverly | 7 | 2 |
| Cincinnati | — | — | Revere | 4 | — |
| Milwaukee | — | — | Leominster | 5 | — |
| Washington | — | — | Attleboro | 5 | 3 |
| Providence | — | — | Westfield | 3 | — |
| Boston | 213 | 60 | Peabody | — | — |
| Worcester | 39 | 8 | Melrose | 1 | — |
| Fall River | 38 | 17 | Hyde Park | 3 | 1 |
| Lowell | 28 | 6 | Woburn | 2 | 0 |
| Cambridge | 27 | 5 | Newburyport | 5 | 2 |
| New Bedford | 26 | 9 | Gardner | 2 | 1 |
| Lynn | 17 | 6 | Marlboro | 3 | 0 |
| Springfield | 27 | 7 | Clinton | 3 | — |
| Lawrence | 18 | 9 | Milford | — | — |
| Somerville | — | — | Adams | — | — |
| Holyoke | 13 | 2 | Framingham | — | — |
| Brockton | 10 | 0 | Weymouth | — | — |
| Malden | 9 | — | Watertown | 0 | — |
| Haverhill | 6 | — | Southbridge | 0 | — |
| Salem | 14 | 5 | Plymouth | — | — |
| Newton | 8 | 4 | Webster | 1 | 0 |
| Fitchburg | 5 | 1 | Methuen | — | — |
| Taunton | 7 | 2 | Wakefield | — | — |
| Everett | 7 | 1 | Arlington | — | — |
| Quincy | — | — | Greenfield | 6 | 2 |
| Chelsea | 4 | 0 | Winthrop | — | — |
| Pittsfield | 14 | — | | | |

## Original Articles.

# SUPRAPUBIC INTRA-URETHRAL ENUCLEATION OF THE PROSTATE.*

BY J. BENTLEY SQUIER, M.D., NEW YORK.

THREE general classifications may be made of conditions which arise in the prostate gland warranting surgical attack. First, inflammation; second, benign changes producing urinary obstruction; and third, neoplasm.

It is, however, the second group which presents the greatest number of complexities and in which the etiology is most obscure. The benign pathological conditions which produce urinary disturbance have been loosely referred to as prostatic hypertrophy, and considerable diagnostic confusion has arisen on this account. Therefore, in considering patients suffering from urinary obstruction due to prostatic lesion, it should be kept in mind that such obstruction may exist without any so-called hypertrophy of the organ, or that even enormous hypertrophy may be present without any disturbance of the urinary function. The truth of this is readily understood if the pathology of the prostate is studied. For example, take these two specimens (103 and 231). The smaller was removed from a patient who had complete retention, whereas the other patient, from whom the larger was removed, had no difficulty in passing urine. The prostate in his case was removed because of attacks of profuse hemorrhage from the prostatic urethra. The patient was eighty years of age and still retained vigorous sexual power. The bleeding would follow the act of coitus or prolonged sexual excitement, and the blood would literally pour out of the urethra. An indwelling catheter was the only means of checking the hemorrhage. After four such attacks he submitted to operation. In view of the profuse hemorrhage malignancy was suspected, but frozen sections at time of the operation and examination after failed to demonstrate it. The patient, since operation, has enjoyed coitus without recurrence of the hemorrhage. The operation took place a year ago this month.

Degenerative changes in the prostate are twofold — those taking place in the stroma and those in its glandular structure. In the first instance, an increase in the fibrous elements occurs with a disappearance of the glandular, but with no real enlargement of the prostate. In the other, the glandular structure hypertrophies, with consequent enlargement of the gland.

The mechanics of urinary obstruction may be explained as follows: By the conversion of the prostate into fibrous tissue the bladder neck becomes surrounded by a hard, inelastic ring, and the function of the internal sphincter muscle, which is outside of the ring, is interfered with. This is essentially a retention produced by an alteration in the action of the involuntary sphincter.

*Read before the New England Branch of the American Urological Association, Boston, March 7, 1911.

The obstruction which may accompany an increase of the glandular elements of the prostate is more apt to be the result of the enlargement of the gland causing a deviation in the course of the urethra, or by some outgrowth of the glandular tissue occluding the lumen of the prostatic urethra or the internal meatus.

There is also a third manner in which retention may take place, namely, from changes in the innervation of the bladder and prostate. Surgically, the first two are of chief interest and call for the same surgical procedure. That is to say, removal of the obstruction.

By studying sections of various prostates we find all degrees and combinations of glandular and fibrous-increase between the two extremes of types which I have mentioned. The specimens with microphotographs presented show the basic types of each class. The first one, representing the hard fibrous prostate which has been described under the name of bar at the vesical neck, stenosis of the vesical neck, fibrous prostate, etc., clearly demonstrates how complete retention might eventually occur by a fibrous ring of this character encircling and constricting the vesical neck, while acute retention may occur at any time from an edema produced by a comparatively mild inflammation or circulatory disturbance.

The history of the patient from whom this specimen was removed is fairly typical.

CASE 246. Seventy-five years of age. Obstructive urinary symptoms developed in 1903 during an attack of pneumonia, when catheterization was necessary.

Following recovery from this illness frequent urination day and night obtained, and continued until December, 1909. Complete retention then took place and it was necessary to put him upon catheter life. For one year prior to operation, which was performed in December, 1910, he had had no voluntary urination. The prostate consisted of a band of fibrous tissue, about half an inch in width, surrounding the internal meatus and so narrowing its orifice that it was barely possible to pass a No. 16 F. catheter.

Fibrous degeneration in the prostate of this character would seem to be caused by conditions which produce similar changes in other viscera with gout, rheumatism or syphilis as the predisposing factor.

Under this heading might be placed the contracted vesical neck so often associated with tabes, as well as those cases which many observers believe to be the sequelæ of chronic gonorrhea. These are the prostates which have been described as cases of retention occurring without appreciable enlargement of the prostate. They are trying cases, but may be successfully handled surgically, the management of which I shall describe later on.

The diagnosis is frequently difficult to make before operation, as we have no means of definitely ascertaining the degree of contraction of the vesical neck, unless the bladder is opened and the internal meatus digitally palpated.

The etiology of the second, the purely glandular type, is obscure. Many ingenious theories have been presented to account for it but at present

the situation can be summed up by saying that we know no reason why at a certain time in a man's life an adenomatous change in his prostate should take place any more than we know why myomatous changes are more liable to appear in the uterus at a cetrain period of a woman's life.

Whatever the etiological factor may be in the causation of prostatic hypertrophy or prostatic obstruction, the cure will depend upon its absolute removal. Although, theoretically, we know that a small prostatic outgrowth may be the obstructing factor, and removal of it all that is required to restore the impaired function of the bladder, practically we find it necessary to invariably remove the whole organ if we would feel assured of a successful outcome. It is not an uncommon experience to find that where a prostate has been presumably removed *in toto*, a small teat-like process has been left, and after the patient has recovered from the operation to discover no relief from urinary obstruction.

CASE 235 forcibly illustrates this fact. The patient, sixty three years of age, had perineal prostatectomy performed in June, 1906. Before the operation he had 16 oz. residual urine and almost constant desire to urinate. He had been a sufferer for years from diabetes insipidus, and the abnormal amount of urine excreted added greatly to his discomfort. A stormy convalescence followed the operation and later he developed melancholia, probably due to having experienced no relief from the prostatectomy.

After operation, he was largely dependent upon the use of the catheter, as there was still the same amount of residual urine constantly present. He also had the incontinence of overflow. A year later, cystoscopy showed the presence of unremoved prostatic tissue, as the probable cause of the operative failure. Operation was advised, but was refused at that time.

In June, 1910, the patient having now come under my care, he was again cystoscoped and the findings of the previous cystoscopy verified. Springing from the floor of the internal meatus was a distinct prostatic flap. The mechanical action of this flap was thought to be the cause of the urinary obstruction and operation advised. Suprapubic cystotomy was performed on June 12, and conditions found as seen by cystoscopy.

The prostatic tissue comprising this flap was excised.

Following convalescence, the patient has been able to evacuate the bladder to within 2 oz. There has been no incontinence except on one occasion when it occurred during deep sleep.

The amount of prostatic tissue which remained after the primary operation weighed only a few grains, but was enough to defeat the purpose for which the operation had been undertaken.

The time may come when, by more refined methods of diagnosis, we may be able to ascertain beforehand just which lobe or outgrowth produces the obstruction, and by its removal alone bring about a perfect result; but at present we are unable to do so.

For the sake of argument let us admit that it is imperative to completely remove the prostate in every case, no matter what our preconceived ideas are regarding the particular portion causing the obstruction. In my experience it has seemed possible to feel more certain of the completeness of prostatic removal after suprapubic than after perineal operation. The prostatic lobes do not break up into fragments or lobules so easily during suprapubic enucleation, as often occurs when removed from below, and the chance of overlooking an intravesical outgrowth is practically eliminated. This tendency of the prostate to break up into lobules during perineal enucleation is well shown in specimens of Cases 26, 35, 65 and 72. The explanation is that when enucleating a prostate through the perineum, even though the prostate is drawn downward with a tractor, it is constantly being pushed away and the finger easily slips into lines of cleavage between the lobules rather than keeping just beneath the capsule of the prostate. This is obviously more true of intra-urethral perineal prostatectomy than where the enucleation is made through lateral incisions in the capsule. On the other hand, when working from above downward, the prostate is steadied at three points, i. e., the triangular ligament, the pubic arch and by the fingers in the rectum, thus facilitating adherence to the original and correct line of cleavage. The thoroughness of suprapubic removal is exemplified in specimens Nos. 106, 130, 226, 227, 239, 241 and 248.

If further argument be necessary for complete prostatectomy, the ever-present possibility of unrecognized carcinoma may be offered. Many early cases give histories and symptoms in no way differing from benign hypertrophy. Specimen 207, which was removed from a patient eighty-one years of age, illustrates this. He had been on catheter life from some months and only submitted to operation because of increasing difficulty in passing his catheter. At the time of operation the prostate was removed without difficulty and macroscopically did not differ from benign hypertrophy. Nevertheless, when sections were made of the various lobes, carcinomatous changes were found, but only in the anterior commissure.

Another point, and one which I believe will reduce the mortality rate of prostatectomy more than anything else, is lessening the length of time the patient is subjected to anesthesia during operation. In most instances, we are dealing with a class of patients who can little withstand any surgical procedure, and absolutely cannot withstand any operation which necessitates prolonged narcosis. This brings me to the subject which is uppermost in my mind in regard to prostatectomy, namely, why I have chosen the suprapubic prostatectomy as the operation of election in the great majority of my patients.

During my early work in prostatectomy I used the perineal method of removal most frequently. This is shown by the first one hundred cases, in which seventy-one were perineal operations, to twenty-nine performed suprapubically. From this series I learned many things, which made me feel that for me the perineal operation was not ideal. The average end results of the suprapubic

operations were more brilliant than the perineal, post-operative incontinence of urine never occured, and I was led to believe that if the difference in mortality of the suprapubic over the perineal could be removed I would feel inclined to use this method of prostatectomy exclusively unless very definite indications were present for perineal operation.

Death following prostatectomy by either method is usually caused by shock, renal insufficiency or pulmonary embolism, and thinking that the first two of these causes could be somewhat influenced by improvement in the technic of the operation, I have steadily worked with that end in view. Shock following any surgical operation, leaving hemorrhage out of consideration, is in direct proportion to the length of time required to perform it and the amount of anesthetic the patient consumes. The ability of the kidney to properly functionate is also reduced by prolonged anesthesia, therefore, indications exist for a rapid operation as well as to conserve the vitality of the patient in every way before, during and after the operation. The technic which has greatly improved my results I shall take the liberty of giving at length, as the carrying out of the little details is so essential. I am not trying to place before you a new operation for prostatectomy, but to show what I consider to be the points which are of importance in performing suprapubic prostatectomy, and some of the reasons for their importance.

In outlining this technic, we will assume that the patient to be operated upon is suffering from simple enlargement of the prostate without complications. Twenty-four hours previous to the operation the abdomen and pubes are shaved and thoroughly washed with green soap, and a dry sterile dressing applied. At the time of operation, the patient is brought to the operating room, placed upon the table, the bladder irrigated and distended with a sufficient amount of fluid. The operative field is sterilized by the tincture of iodine method. Sterile towels are placed on the patient and he is made ready for operation before anesthesia is commenced. The advantage of this method of preparation is that the patient is not compelled to lie in a pool of water with the opportunity of a chilling of his body surface as by the old method of sterilization, where the final preparation consists in soap and water scrubbing of the patient's abdomen, and application of alcohol and ether and solutions of bichloride of mercury to the parts after the patient is under the anesthetic. Instead, he is kept warm and dry right up to the time when the incision is made.

After all preliminary preparation has been completed and the towels arranged, and the surgeon is ready to commence operating, and not until then, is the anesthesia started. My perference for the anesthetic is ether, given by the drop method. The reason is that it is the safest general anesthetic where complete anesthesia is necessary, and complete anesthesia is necessary, if only for a few moments, in performing this operation rapidly. This is explained as follows: After the abdominal incision is made and the bladder opened, complete relaxation is desirable to make the enucleation of the prostate easy, because if the patient is not fully under the anesthetic the rectus muscles will so tightly grasp the operator's fingers that it will cause them to tire quickly and thus interfere with the rapidity of the enucleation. The enucleation of the prostate having been accomplished, the anesthetic is discontinued, making the interval of time during which the patient has been in complete anesthesia only a few minutes.

The abdominal incision having been made and the bladder exposed, the incision in the bladder, large enough to admit two or three fingers, should be made high up on the fundus close to the peritoneal reflection. (*Plate* 1.)



Plate 1.

This may seem to be an unimportant matter, yet it has a direct bearing on the length of time required for the healing of the suprapubic sinus. A glance at *Plates* 2 and 3 will explain the reason at once. If the opening is made low down behind the pubic bone through fear of injuring the peritoneum or otherwise (*Plate* 2), when the patient's convalescence permits him to assume an upright position, the bladder opening of the suprapubic sinus is in a relatively dependent portion of the bladder, thus facilitating the constant escape of urine through the sinus (*Plate* 3). Such a condition will undoubtedly increase the length of time necessary for healing to take place. This is especially true in patients who have relaxed abdominal walls with large dilated bladders.

The method of enucleation of the prostate which I prefer varies from the description usually given



PLATE 2.

and is of very considerable importance as it materially aids in reducing the length of the time of the operation. The details of the method are: Do not seek the most prominent lobe of the prostate and commerce enucleating by boring through the bladder mucous membrane at this point, but insert the finger into the internal meatus and break through the roof of the prostatic urethra. (*Plate* 4.) Access is at once given to the line of cleavage between the lateral lobes just beneath the anterior commissure. The enucleation is then begun by working the finger upward and forward, freeing the apex of the prostate from its capsule in the region of the triangular ligament. (*Plate* 5.) A sweep of the finger frees it in front and on one side, then in like manner on the other, and the prostate is turned into the bladder, with its apex pointing upward, when a little separation from the capsule posteriorly completes its removal. (*Plate* 6.)

Carried out in this way, with a little care, there is practically no danger of injury to the rectum, and the enucleation is rapid and complete. Sufficient evidence is now on record to show that a removal of a part or all of the prostatic urethra in no way militates against perfect restoration of urinary function. Theoretically, if this method is used, the resulting wound in the bladder is on a higher level than if the bladder mucous membrane had been incised over the most prominent prostatic lobe, and during the subsequent drainage of the bladder is less liable to be constantly bathed in urine. An assistant slips his fingers into the rectum to push up and steady the prostate during removal. The operator should not put his fingers into the rectum. The objections are twofold: First, it interferes with the immediate completion of the operation, as resterilization of the hands and the changing of gloves is at once necessitated; second, because such resterilization consumes valuable time which should be saved the patient.

The prostate having been removed from the bladder, a double drainage tube, whose total caliber is about No. 32 F., is inserted into the bladder wound and sutured at its upper angle by a chromic gut stitch, allowing the drainage tube to project into the bladder three quarters of an inch. To secure efficient drainage, the proper placing of this tube is important, and this stitch through the bladder holding it in position for perfect drainage should not be omitted, even though a second one is placed through the skin to take off any undue strain. The lower angle of the bladder incision is accurately closed up to the tube with chromic gut sutures. The abdominal wall is closed with three or four figure-of-eight silkworm gut sutures, one loop of the stitch approximating the fasical plane and the other loop the skin. As soon as the drainage tube has

been sutured into position, hot saline irrigation of the bladder is commenced and continued during the remainder of the operation through this double tube. By the time the abdominal wound has been sutured all active hemorrhage will be practically checked. A prostatectomy carried out in this manner can be completed in five or six minutes, and the patient need be completely under the anesthetic but two or three. By the time the dressing is applied he is usually well out of the influence of the anesthetic.



Plate 3.

The description of the operation just given applies, as I remarked, to the simple enlargement of the prostate gland without complications; but, on the other hand, it has also been my most efficient means of dealing with small fibrous prostates or fibrous contraction of the vesical neck, and has given results vastly preferable to those obtained by simply incising the vesical neck by glavanocautery or the knife. The ease with which these fibrous prostates can be removed is wholly dependent upon the point where the enucleation of the obstructing tissue is commenced. It is comparatively simple to remove tight fibrous bands of prostatic tissue obstructing the vesical neck if the proper line of cleavage is discovered, and, if the prostatic urethra is opened upon the side or its roof, this line of cleavage is readily found.



Plate 4.

In the treatment of patients suffering from

prostatic obstruction complicated with foul cystitis, advanced kidney disease or otherwise, every means to improve the general and local condition should be used before any operation is undertaken. The simpler procedures, such as

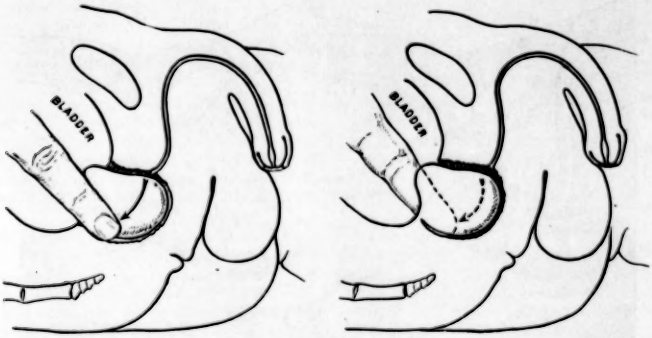



PLATE 5.

frequent bladder irrigations, an indwelling catheter, attention to the details of medication and nursing, have been all that have been required in most instances. In my opinion, the two-step operation for prostatectomy, namely, primary cystotomy for drainage followed later by prostatectomy, has been altogether too much exploited. Some surgeons have gone so far as to advise it as a routine procedure. I have found that if it is necessary to open the bladder for drainage, the few extra moments required to remove the prostate has not jeopardized the patient.




PLATE 6

CASE No. 247 is illustrative.

The patient, a gentleman seventy-six years of age, with advanced degenerative changes in his kidneys, heart and arteries. He was brought into the hospital late last New Year's Eve with a bladder distended above the umbilicus. He had not passed urine for eighteen hours, and for some hours previous to the time when I was called to see him, repeated unsuccessful attempts to pass a catheter had been made. I made a further attempt to catheterize him and also failed, the catheter being obstructed within the prostate. The prostate felt large by rectum. A history of prostatic symptoms extending over a period of years was obtained, but he had never had complete retention before. His condition was alarming, he had a rapid, weak pulse, there was great prostration and fine râles could be heard all over the lungs.

It was decided to open the bladder at once. He was, therefore, conveyed to the operating room, placed upon the table and a coat of iodine painted over the lower abdomen, a few sterile towels arranged and the patient was ready. It was thought best to give him a few whiffs of ether and to open the bladder under primary anesthesia. This was done, the ether acted as a cardiac stimulant, and his condition improved. At the moment of primary anethesia, the bladder was opened. Fifty-odd vesical calculi were found with a large obstructing prostate. The stones were scooped and irrigated out, and the patient's condition having progressively improved since the ether was started, the prostate was removed as well.

A little time was lost in scooping out the calculi, and twelve minutes elapsed from the time the anesthetic was started to the completion of the dressing. The total time during which ether was administered was seven minutes.

The prostate removed showed that a false passage had been made into it. through the prostatic urethra, accounting for the failure in passing a catheter. The false passage can be plainly seen in the specimen. The patient's convalescence was uneventful. At the end of two weeks the wound was tightly closed, which is rather early after suprapubic prostatectomy, and he was voiding urine.

I do not cite this case as remarkable, for it has not been an uncommon experience; nevertheless, if the bladder had been only drained, leaving the prostate for later removal, I might have felt that the primary drainage had made successful prostatectomy possible.

It would seem that the two-step operation has a very limited field and should be kept for such patients suffering from sepsis and running a temperature, and in whom the use of an indwelling catheter is impractical or catheterization

impossible. The preliminary cystotomy for drainage should then be performed under novocaine anesthesia.

The only fatalities following suprapubic prostatectomy I have had during the period of the last two years occurred in two patients who died of pulmonary embolism. This was in a series of sixty-seven operations. Death from this cause is apparently unavoidable, and probably is especially liable to occur after prostatic operation, the direct connection of the prostatic veins through the hemorrhoidal to the right side of the heart being doubtless the predisposing factor. In operations upon viscera whose veins empty into the portal circulation, pulmonary embolism is rarely observed, explained, possibly, by the emboli being arrested and absorbed in the liver.

I would not, however, minimize the risks of prostatectomy. A certain percentage of deaths will come to every operator. Patients will succumb to ether pneumonia when least expected, and with no discoverable fault of the anesthetist. Renal insufficiency will claim its quota, for there is no absolutely accurate means of determining before prostatectomy the postoperative functional capacity of the kidneys. The recent phenosulphophthalein tests, although an advance, cannot be considered as giving the final word upon the advisability of operation. We still have to be guided by the examination of the twenty-four-hour excretion, and this has been notably inadequate in the past.

I am convinced that the percentage of death following prostatectomy by either suprapubic or perineal methods will differ but little when performed by equally competent surgeons.

One thought in conclusion: Many have discredited prostatectomy because they have been led to expect the impossible from it. Therefore, the patient should be warned that, by removing the obstruction to urination, it does not necessarily follow that perfect compensation can be restored to a bladder which is already a mass of degenerated muscle fiber, connective tissue and diverticulæ; and the surgeon should realize that the removal of the prostate is often the simplest part in the management of a chronic infection of the genito-urinary tract. It may be but the first step towards a cure which will require weeks or months to consummate.

## THE VALUE OF THE GUINEA PIG TEST IN GENITO-URINARY TUBERCULOSIS.

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In an article entitled "Specimens of Tuberculosis of the Kidney in which guinea pig test was negative,"[1] Tenney, of Boston, reports three cases of nephrectomy "for pain, with pus and blood in the urine, and frequent and painful micturition. The symptoms of disease had been present in these patients for four, six and three years. In every case the urinary sediments had been injected into guinea pigs, — twice with one patient, — and the autopsy findings on the pigs after six weeks were negative."

"Two of the removed kidneys were examined at the Harvard Pathological Laboratory and the other at Tufts. The diagnosis returned to me was tuberculosis in each case."

Tenney concludes his paper as follows:

"There is, then, no constant stream of bacilli flowing out of a tubercular kidney, and while the presence of tubercle bacilli in the properly obtained sediment proves their source to be in the urinary tract, their absence proves nothing so far as diagnosis goes."

These cases having brought to our attention the possibility of error in the "guinea pig test," we have examined the records of the inoculations done in the Clinico-Pathological Laboratory at the Massachusetts General Hospital with reference to determining the percentage of error occurring in a large series of cases.

The technic is the following: The urine is drawn from the bladder by a catheter, or from one or both kidneys by ureter catheters in the course of a cystoscopy. The specimen is then centrifugalized, except in the event of its being distinctly foul, or of there being an uncommonly heavy sediment. Under these circumstances it is simply allowed to stand for a few hours and the sediment is then taken. From twenty to forty minims of this urine is then injected under the skin of the pig's abdomen (occasionally direct intraperitoneal injection has been accidentally done). One pig is inoculated with each sediment, and is killed at the end of five weeks. Immediate autopsy is performed. Smears from the diseased organs and lymph nodes are stained, and the presence of the tubercle bacillus demonstrated by the microscope. The diagnosis is thus proved microscopically and macroscopically.

In most cases a culture of the urine is made at the same time. When positive, these cultures have shown the usual bacteria of urinary infection, notably bacilli of the colon group and the staphylococcus albus. That the very frequent presence of these bacteria rarely injures the guinea pig is shown by the fact that, in the large number of inoculations collected, death from sepsis has been a rarity. That the value of the test for tuberculosis is in no way impaired is shown by the figures which follow.

These figures are based on the unselected records of guinea pig inoculations for suspected tuberculosis during the two years from January, 1909, to, and including, January, 1911. In this period of time a total of 252 consecutive inoculations have been done. These have been divided into two large groups: First, where the test was positive; second, where negative results have been obtained. In order to make the results of this investigation as indubitably accurate as possible, each group has been subdivided into those cases in which unquestionable proof of the

[1] Boston Med. and Surg. Jour., Feb. 16, 1911.

accuracy of the test is at hand in the form of operation with a pathological report of the organs removed, autopsy, long-continued clinical observation, or repeated inoculations. The second subdivision includes those cases where only clinical evidence, with or without cystoscopy, and of usually brief duration has been obtained.

The results may be briefly tabulated as follows:

| | |
|---|---|
| 1. Total number of guinea pigs inoculated, | 252 |
| 2. Test positive in | 67 |
| (*a*) Proved, | 58 |
| (*b*) Unproved, | 9 |
| 3. Test negative in | 185 |
| (*a*) Proved, | 139 |
| (*b*) Unproved, | 46 |
| 4. Total number of tests proved, | 197 |
| 5. Test *negative*, pathological report or autopsy *positive* | 2 |
| 6. Percentage of error in guinea pig test, | 1.01 |
| 7. Test positive, no tuberculosis of the urinary tract | 1 |

Certain items of the foregoing table need explanation and elaboration. Firstly, it is fair to say that there can be no reasonable doubt of the accuracy of the guinea pig findings when the results are positive. The animals obtained by and used at the Massachusetts General Hospital are all carefully selected for their health and vigor. They are kept in a specially constructed room under the best of hygienic conditions, and none but vigorous animals are used for the test. It is common knowledge that the guinea pig is peculiarly susceptible to tubercular infection. Hence its value for inoculation purposes. But it is extremely rare, in the experience of our laboratory, to lose an animal from accidental tubercular infection.

The following case illustrates the care which is taken in ruling out this possibility, and it is the only one of its kind in this series.

Guinea pig inoculated April 2, 1909. Forty minims of urine injected under the skin of the abdomen. Killed May 4, 1909.

"Autopsy shows tuberculosis of the maxillary and mediastinal lymph nodes and spleen. No tuberculosis of the axillary or inguinal lymph nodes. Inasmuch as the animal was inoculated subcutaneously in the abdominal wall, this tuberculosis in the animal must be regarded as infection by the mouth and not as the result of inoculation."

A subsequent negative inoculation proved the accuracy of this observation. It, therefore, may be said without reasonable doubt that in the tests comprising this series a positive result needs no further proof. The subdivision of item No. 2 is then unnecessary.

It is seen that the number of negative tests outnumber the positive by about three to one. It must be remembered that in a large modern hospital many tests are made simply to complete a case and because the facilities are at hand. The patient is given the benefit of any doubt as to his disease. Many inoculations have, therefore, been made to exclude tuberculosis, and others only because such a diagnosis seemed remotely possible.

The standard required for proof in these negative cases has already been mentioned, and it has been strictly adhered to. In going over the clinical records of the forty-six "unproved" cases there were many where cystoscopy showed no characteristic tubercular lesions of the bladder, where the urine showed no blood and perhaps only a little pus, or where there were no urinary symptoms whatever. Such cases we personally consider to be non-tubercular without reasonable doubt, yet we do not include them in the "proved" series.

Of special interest is item No. 5 of the above table. In the presence of undoubted tuberculosis, as shown by the surgeon and by the pathologist, the guinea pig did not react in the following cases:

CASE 1. E. S. 592–105.

*Clinical diagnosis.* — Tuberculosis of kidney and bladder.
*Urine* contains no blood or pus.
*Cystoscopic* picture characteristic of tuberculosis.
*Operation.* — Nephrectomy, ureterectomy.
*Guinea pig test* negative (bladder specimen).
*Culture* from kidney shows no growth.
*Pathological report.* — Tuberculosis of kidney and ureter. *Ureter completely obliterated.*

The lessons taught by this case are that (1) no urine may come from the kidney owing to an obstruction of the ureter, and (2) in obtaining a urine for guinea pig inoculation at least a part of it must come from the diseased organ. Hence it is wise to always make certain that urine is coming into the bladder from both kidneys, or to obtain the urine directly from each kidney (or at least from the one under suspicion) by means of the ureter catheter. Had these steps been taken in this case there can be no doubt as to the results of the guinea pig test. Under the circumstances, however, it must serve as an example of the possibilities of error on the part of the guinea pig.

CASE 2. S. S. 117–255.

*Clinical diagnosis.* — Abscess of right kidney (tubercular).
*Urine* contains blood and pus.
*Cystoscopy* not done.
*Operation.* — Nephrectomy.
*Pathological report.* — Tuberculosis.
*Culture* from pus in kidney shows no growth.
*Guinea pig test* negative.

In other words, here is a case similar to those which form the introduction to this paper, the only one of its kind occurring in this series. We shall not attempt to explain it beyond saying that there is nothing infallible in the science of medicine. One statement of fact may be worth while. We said at the outset that our guinea pigs were killed at the end of thirty-five days, a period of time which the experience of the hospital has shown to be sufficient to produce the desired result. The animal in this case was killed at the end of thirty-three days. Surely a difference of two days would not make the difference between a positive and a negative result. It is fair to say that guinea pigs, like all other animals, human and otherwise, have each their

special power of resistance to infecting agents. It is conceivable that the animal in question was of unusually high vitality, or that the tubercle bacilli in the urine were few in number or of low virulence. We are even willing to admit the possibility of a misstep along the path from patient to pig. Whatever the case may be, the record stands. As a matter of fact, a period of five weeks, or even of six weeks (which the Boston Board of Health Laboratory requires), is too short a time for a proper test. Two or even three months is necessary, in the opinion of many authorities, to demonstrate the presence of the tubercle bacillus. For clinical purposes, however, the lapse of five or six weeks is apparently sufficient, in the majority of cases, and, in fact, is all that we can afford to allow in the way of delay to our patients. Had the guinea pigs inoculated with the urines which are reported as negative in our series and in Tenney's cases been allowed to live for two or three months, the results might have been different in some of them. These would have been the cases in which, if the tubercle bacillus was present at all, it occurred in greatly diminished numbers, or was of an unusually low degree of virulence.

Should we exclude Case 1 (which we might fairly do) on the grounds that the guinea pig was not given a fair chance to show his worth, it reduces the percentage of error to the remarkable fraction of 0.5, which in a total of 197 conclusive tests is not at all discouraging.

Item No. 7 in the table is worthy of some detail as showing the possibility of the escape of tubercle bacilli through a non-tuberculous kidney.

Case 3. E. M. 729-13. Female.

*Clinical diagnosis.* — Subacute glomerulonephritis, Vincent's angina, lobar pneumonia, acute fibrinous pericarditis, pulmonary tuberculosis, hematuria.
*Urine* contained blood, casts and renal cells.
*Guinea pig test* positive.
*Autopsy* showed chronic glomerulonephritis, pneumonia, tuberculosis of bronchial lymph nodes, tuberculosis of superior lobes of lungs.

The occurrence of such a case not only confirms our belief in the permeability of the kidney to bacteria, but also opens up a subject which others have touched upon and which we hope to follow to a definite conclusion at some future time. It demonstrates also the extreme delicacy of the guinea pig test, for it is not reasonable to suppose that the number of tubercle bacilli filtering through a non-tuberculous kidney is large at any one time.

Before closing we wish to recite briefly the histories of three cases having all the "earmarks" of tuberculosis, but in which the guinea pig, microscope, operation or long observation showed us our error.

Case 4. W. S. 647-1.

*Cinical diagnosis.* — Tuberculosis of left kidney, tuberculosis of left epididymis.
*Urine* contains blood and pus.
*Culture* of urine shows staphylococcus albus.
*Cystoscopy* showed a typically tubercular bladder, with delayed and scanty secretion of urine from the left kidney.
*Operation.* — Nephrectomy, ureterectomy, epididymectomy.
*Pathological report.* — Kidney, pyelonephritis; Ureter nearly obliterated and containing much fibrous tissue; epididymis, chronic inflammation.
*Guinea pig test* negative on two occasions.

Case 5. E. M. 173025; S. S. 146-115; 156-53. Female.

*Clinical diagnosis.* —Genito-urinary tuberculosis; debility.
June, 1907. Left nephrectomy. *Pathological report* showed tuberculosis. Considerable ureter left behind. *Cystoscopy* showed tuberculosis of the bladder; no ureter catheterization. Condition of right kidney undetermined, but evidently good, as patient stood operation well. No guinea pig inoculated, but urine contained blood and pus.
December, 1907. Second operation for curetting sinus of loin from ureteral stump.
January, 1909. Patient came to the Accident Room in response to a letter. General improvement and gain in weight. Slight urinary symptoms persist. Occasional mild pain in right costovertebral angle.
November, 1910. Patient works every day, keeps her weight and strength. Diuria every two or three hours; nocturia once or twice. Pain in right side, with some tenderness. Urine contains blood, pus and mucus.
*Cystoscopic* picture resembled tuberculosis in many ways, but considered to be "acute colon infection." Right ureter not catheterized.
*Culture* of urine shows staphylococcus albus.
*X-ray* not taken.
*Guinea pig test* negative.
Forced feeding, rest in bed, and sandalwood oil wrought much improvement. Right kidney palpable, slightly tender. Urine showed only pus, no blood or mucus. A subsequent report from the patient's physician shows her to be in good condition and working every day. No further details could be obtained.

Case 6. W. S. 561-231.

*Clinical diagnosis.* — Tuberculosis of the bladder.
*History* characteristic.
*Urine* contains blood and pus.
*Culture* of urine negative, but later staphylococcus albus was found.
*Guinea pig test* was negative.
*Cystoscopy* thought to show tuberculosis. A second examination showed a tumor of the bladder.
*Operation* revealed an inoperable tumor of the base of the bladder.

These cases are to be considered simply as further evidence of the extreme reliability of the guinea pig in the final decision.

Let it not be understood from what we have said that absolute immunity from error in the diagnosis of genito-urinary tuberculosis is claimed for either the surgeon, the pathologist or the bacteriologist at the Massachusetts General Hospital. It has been shown that all are at times in the wrong. What we have attempted to prove is that the guinea pig test for tuberculosis, when carefully done, is by far the most delicate and invariably accurate diagnostic weapon at our disposal and that a negative test is of indisputable value.

## REMARKS ON A FORBIDDING CASE OF CANCER INVOLVINC TONGUE, TONSIL AND PHARYNX PERMANENTLY CURED BY RADICAL EXCISION.

BY MAURICE H. RICHARDSON, M.D.

SOME years ago I reported a case of total excision of the pharynx for cancer, with a permanent esophagostomy.[1] Herewith I report a case of partial excision of tongue, tonsil and pharynx for cancer, with no recurrence at the end of five years. It may be not inappropriate for me to give the reason for publishing these cases. It is not that operations in hopeless cancer may be multiplied, — far from it, for there are too many now, — but rather that we may encourage operation in apparently hopeless cases which are not so bad as they seem; that we may discriminate more accurately between the cases really inoperable and those only apparently so; that we may thus save from the horrors of hopeless cancer a few discouraged and discouraging patients.

The only way we can improve our treatment is by improving our prognosis. The case must, therefore, be considered before operation from the point of view of prognosis.

Upon what does the prognosis depend, as gauged before operation is attempted or even advised? Upon an accurate diagnosis, of course; upon the extent of the disease; upon its virulence; upon the patient's powers of resistance; upon the thoroughness of operation. To give every one of these elements its proper weight, the surgeon must have had a large experience and must have marked common sense.

From a vast number of cases of cancer — operated upon and unoperated upon — I select one which, from its situation and extent, seems in its operative prognosis one of the most hopeless.

I like to bring forward cases like this to show that we may be too much inclined to pessimism. I admit that the results as a whole are only too discouraging, and it is, therefore, no wonder that we are pessimistic. It is no wonder, too, that we are pessimistic, because, in spite of a success here and there, the results show the real hopelessness of our prognosis. We may have so many complete failures in the course of years that we shall forget the possibility even of success. I admit such gloomy prognostications in many cases that it seems hardly worth while to inquire the outcome at all, and then only to learn the time of recurrence and the date of death. But things are not always as bad as they seem. This case, in fact, helps us to tell why some cases are not so bad as they seem; it helps us to decide when under seemingly hopeless conditions that hopelessness is apparent rather than real; it tells us why the contra-indications to operation that have so long prevailed may not be based upon sound reasoning or accurate observation; it tends to prove that, for some reason perhaps not yet fully understood, certain attributes of a case differ in prognostic value, though it may not tell just why; it helps in a small way to solve the problem of operative surgery in advanced cancer; it shows that there is a difference in virulence of the growth, or in the meaning of infiltration as we ordinarily understand the word.

Mr. J. E. F., aged sixty-one, hotel-keeper, was a patient of Dr. F. E. Sweetsir, of Merrimac, Mass., who sent him first to Dr. J. W. Farlow. On Dec. 10, 1905, Dr. Farlow referred him to me with the diagnosis of malignant disease of the right tonsil and pillars of the fauces. He had found nothing abnormal in the larynx. There was a good family and personal history, but the patient was a great user of tobacco. A year before this he had had a soreness of the tonsil which disappeared on his giving up smoking. In September, two months and half before my examination, the patient noticed soreness and swelling in the right tonsil, like that of a year before, but it did not disappear. There was little pain or difficulty in swallowing, and nutrition had been in no way impaired. The heart, lungs and kidneys were normal, but there was a marked arteriosclerosis. There was also a chain of enlarged and presumably infected lymph nodes from the angle of the jaw to the sterno-clavicular joint.

I considered the prognosis carefully in this case and finally consented to make an attempt at radical cure, in spite of the situation of the disease and the diagnosis, both of which were discouraging in the extreme. In coming to this conclusion I was influenced favorably by the case of Mrs. J., referred to me also by Dr. Farlow, in whose case complete recovery followed total extirpation of the pharynx with permanent esophagostomy.[2]

The operation on Mr. F. was performed Dec. 12, 1905, at the Corey Hill Hospital. The ether was given by Dr. Garland. A curved incision, with its convexity downward, was made from the mastoid process to the symphysis of the jaw. A second incision was made from the middle of this downward nearly to the sternum. The submaxillary and the carotid triangles were then thoroughly dissected. The posterior belly of the digastric muscle was cut at the anterior end, and the muscles at the base of the tongue on the right side were divided. A mass of cancerous glands about an inch and a half in diameter were found deep in the carotid and subclavian triangles. After I had tied the carotid artery just above the superior thyroid branch, a mass of new growth involving the tonsil, the tongue, the pillars of the fauces and the pharynx was separated by a fair margin of contiguous healthy tissue. This mass, with a chain of glands running down in front of and to the outside of the carotid sheath, was dissected away nearly to the sternum. After this mass had been isolated on all sides by free dissection, an opening was made into the back of the mouth, just in front of the tonsil. A strip along the side of the base of the tongue was next dissected down to the tonsil. The tonsil itself was cut away with a good margin of normal-looking mucous membrane. The gap left in the tongue and in the pharynx by the removal of this mass was partly closed with chromic catgut. The wound in the pharynx was then packed with gauze. This patient made a good recovery and was discharged from the hospital Jan. 11, 1906.

I supposed that long ago there had been recurrence and death, but on Feb. 1, 1910, the patient was reported by a friend to be in good health. On Feb. 3, 1910, Dr. Sweetsir wrote me that he had seen Mr. F. within a month; that he was well and strong and weighed about two hundred pounds; that his hotel had been destroyed and he had just erected a new one.

In March, 1910, Mrs. F. wrote me that her husband

[1] See BOSTON MED. AND SURG. JOUR., Nov. 5, 1908.

[2] BOSTON MED. AND SURG. JOUR., Nov. 5, 1908.

had not been so well for years. "You would be surprised," she said, "if you knew all the hard work he has done since the first of September."

On Feb. 11, 1911, I made a very careful examination of the throat, and found not the least sign of recurrence.

Dr. Whitney's report was a follows:

HARVARD MEDICAL SCHOOL,
BOSTON, Dec. 18, 1905.

*Dear Dr. Richardson,* — The specimen from Mr. F., Dec. 12 (C. 512 — 2), consisted of portions of the tonsils which were occupied by a superficially infiltrating new growth, opaque, white, with an ulcerated surface.

With this there were also some enlarged lymph nodes and a piece of the submaxillary gland.

The growth from the tonsil consisted of folded masses of large epithelial cells infiltrating the tissue and reaching well down to the muscular layer.

Microscopic examination showed the growth to be made up of flat epithelial cells in large columnar-like masses invading the tissue of the tonsil.

Microscopic examination of the lymph node showed invasion in places with a similar new growth. The submaxillary gland presented nothing abnormal.

In addition, there was also a piece of tissue from the soft palate which showed infiltration with a similar new growth.

Diagnosis: Epithelioma.

Yours very truly,
(Signed) W. F. WHITNEY

I do not know that others are as profoundly discouraged in the treatment of cancer as at times I am; but occasionally it does seem that there is absolutely no use in trying operative surgery. But we must keep up the fight in spite of all discouragement, and, more especially, in spite of the hopes that are held out by new non-operative methods.

We forget, do we not, our successes; we do not even know that we have had them. We do not find because we do not seek. I fully believe that if we look into our remote results, we shall find, in some of the apparently discouraging cases, renewed hope.

Could we succeed by any non-operative method as well as we now succeed with the operative, the instrumental treatment would vanish from the earth. We despond because we see and hear only of our failures; we often do not know of our successes.

It is the object of this and of succeeding papers on malignant disease to call attention to the successes of our excisions and to replace a too deep despondency by a not too exuberant hope. And if we cannot find renewed hope in operative surgery, I have faith that in the near future we shall find a cure in the use of serums, toxins, vaccines or other non-operative methods.

## Clinical Department.

### A CASE OF DIABETES TREATED BY FEEDING OF CALVES' PANCREAS.

BY WILLIAM H. COWLES, M.D., AYER, MASS.

C. P. was twenty-three years old in 1894. His family history was good, there had been no diabetes among near relatives. He was of large frame and good muscular development, with a normal weight of 190 lb. He was active and athletic, always having a place on the football teams of his school and college.

He trained and played during the football season of 1893, feeling very well. In December of that year he lost flesh and strength.

In February, 1894, it was discovered that he had diabetes and he was put on the usual diabetic diet with only moderate improvement.

He first came under my observation in August, 1894, and was then much reduced in weight. Urine, 6–8 quarts in twenty-four hours; specific gravity 1035-38.

He lived an out-door life, taking much exercise during 1894–5–6, following the usual diabetic regimen very faithfully.

He also took a long course of alkaline mineral water and arsenic with some improvement for a time.

Many other remedies were tried with only transient benefit. During the latter part of 1896 he failed steadily, losing flesh and strength. His urine was 7–10 quarts; specific gravity, 1040–1045.

Early in January, 1897, he was extremely emaciated, resembling one in the last stage of pulmonary consumption and unable to leave his bed. His breath had a strong odor of acetone, he was also dull and somnolent for several days. His death was expected at any time.

The relation between pancreatic disease and diabetes was just then under frequent discussion and led me to try pancreatic feeding.

A regular supply of fresh calves' pancreas was procured from a nearby slaughter house. Fortunately, the patient was fond of rare and raw meat and ate from one to six uncooked pancreases daily, averaging over three. At my suggestion he cut them in pieces about the size of an oyster and bolted the pieces whole.

He began at once to improve, his appetite returned, his strength increased and he gained in flesh. His diet was not much restricted, nothing but sugar was forbidden. In a few days he was out of bed, in two weeks he was out of doors and weighed 164 lb., which was a great gain from his lowest weight. Two weeks later he weighed 180 lb., a gain of 16 lb. in fourteen days. The thirst was lessened. The urine had fallen to 2–3 quarts in twenty-four hours; specific gravity, 1028–1030. It was never found sugar-free.

His health continued to improve, he became strong and ruddy and said that he had never felt better.

He continued to eat pancreas and felt well enough to engage in active business, against my advice.

Early in March, 1897, he ate some stale pancreas, vomited, become disgusted with it and never ate another.

Soon after, his business venture proved a failure and the diabetic symptoms gradually returned, so that in June, 1897, he had lost much of his gain in flesh and strength; urine 7–8 quarts; specific gravity, 1035–38.

About July 1 he developed an enormous carbuncle of the neck and upper part of the back and died July 11, 1897.

An autopsy the following day showed the thoracic and abdominal organs, except the pancreas, normal in gross appearance. The pancreas was represented by a fibrous cord about one fourth the size of the normal gland. Unfortunately, postmorten changes made it impossible to discover anything about the minute changes in the specimen.

I have tried the same treatment in several other cases of diabetes without benefit, but no other patient has been able to eat such a quantity of raw pancreas or continue eating it as long as C. P.

The usual comment on pancreatic feeding in diabetes is that it has been disappointing or useless. This case, my own subsequent experience and the reported

lack of success by others, suggests that the usual failures may be due to giving too little of the pancreatic substance.

Few people would be able to eat, even if they could get, the amount of uncooked pancreas taken by my patient.

About the time C. P. was eating pancreas I was also treating several cases of myxedema by thyroid feeding with the usual striking success.

The result in the diabetic case seemed so simple and natural that it did not then occur to me to publish it.

Now, so far as I know, this case remains unique after a dozen years, and that is my excuse for writing about it at this late day.

## Medical Progress.

### REPORT ON DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON

#### PROFESSIONAL DERMATITIS OF THE HANDS.[1]

THERE has been much discussion as to the etiology of these affections, and although one important element, that of external irritation, is quite evident, much still remains undecided. By Hebra they were placed in the category of the eczemas, and he considered them due to a lowered power of resistance, either individual or local, to mechanical irritation of any nature. According to this authority, the state of health of the subject at the moment of the application of the eczema-producing cause is important. People who have been able to withstand the effects of an irritant when in good health often succumb to it when their condition is less vigorous.

Kaposi thought that the form of eczema to be produced was due to the nature, intensity and duration of the irritation, as well as to the irritability of the individual skin. The acute or chronic course of the eczema depends on the irritability of the skin and on the single or repeated application of the irritating substance. This irritability of the skin varies in different individuals and sometimes at different times in the same subject. Upon what depends this variability? This question it has been difficult to decide.

Besnier believed that the irritability depended upon external or internal toxic conditions, varying according to the individual. Hallopeau and Leredde consider that there are general and local conditions not well understood, among which they number modifications of the oil secretion of the skin. And, in fact, it is true that a professional dermatitis is rarely seen on the palm of the hand, a place where the perspiration mingled with fatty secretion is abundant, and also that this affection is more common during the winter; and that, finally, oily skins appear to be less affected than dry skins. Thibierge invokes the chemical qualities of the skin, an individual, personal or hereditary predisposition, affected especially by digestive troubles. Others also lay stress on the importance of attention to hygiene, and especially to the digestive system.

The basis of the present paper was offered by the study of 27 cases of professional dermatitis. Of these 27 patients, very few were in perfect health; most of them suffered from some functional disorder, such as migraine, neurasthenia, etc.; 13 of them were affected with digestive troubles, gastralgia, pyrosis, vomiting, etc. A large number had hyperesthesia of the stomach on pressure. Hence the writers agree with Tibierge and Darier that the frequency and, also, without doubt, the importance of digestive troubles were incontestable. The question then arises just what is a digestive trouble, and in this the writers allow themselves a pretty wide range as to the quality and quantity of food and drink that is deemed injurious, as well as the psychical and inhibitory influences that affect digestion. With these premises they come to the conclusion that there was serious vitiation of digestive hygiene in 22 of their 27 patients.

By a method of digestive treatment that the writers call the ataraxic treatment, they found that, of their 27 patients, 14 were improved or cured in an average of ten days, the digestive treatment being combined with local treatment and the suppression of the irritant. In some of these cases patients were cured in a few days who had been afflicted for months and years. In 9 cases the digestive treatment alone was curative without local treatment or the suppression of the irritant. As in 9 cases no digestive trouble could be detected, the writers affirm that it is a vitiation of the digestive hygiene and not a dyspeptic trouble that is pathogenic, a distinction that will probably be difficult of appreciation to many. Much stress is laid on the importance of deliberate mastication, as what the writers call tachyphagia is responsible for some of the professional dermatoses. It is the opinion of the writers that the functional irritation of the stomach caused by vitiation of the gastric hygiene is transmitted by means of the sympathetic and cerebrospinal systems to the vasomotor, secretory and trophic nerve fibers of the skin. Hence the beginning of this form of dermatitis, like so many others, is characterized by pruritus and to some extent dermatalgia, and to this phase erythema, vesiculation and "eczematisation" rapidly succeed.

#### LEPROSY.[2]

At a meeting of the New York Academy of Medicine, Dec. 29, 1910, several interesting papers on this subject were presented.

The first paper was by S. Pollitzer, of New York, and dealt with the history of leprosy in the United States. After a brief sketch of the history of leprosy in Europe, the writer states that at the time of the discovery of America, leprosy was still quite common in Europe, although evidently on the decline, and that it existed to a considerable extent during the next two centuries. The disease being so relatively frequent in Europe during the colonization period of this country, it seems odd that there is no authentic evidence of its occurrence among the early colonists. On

[1] Jacquet et Jourdanet: Ann. de Dermat. et de Syph., January, 1911.

[2] Jour. Cutan. Dis., May, 1911.

the other hand, there is clear evidence of the introduction of the disease into Mexico, South America and the West Indies. Columbia is said to-day to contain at least 30,000 lepers, more than are included in any leper center on this continent. The first authentic mention of leprosy in the United States is found in a book published in 1775 by a Captain Romans on the "Natural History of East and West Florida," in which he describes the disease among the blacks. At that time also the disease existed in Louisiana, brought over by the Spaniards. There has been a great decrease in the number of lepers in Louisiana in the last forty years, the number at the present time being estimated as between 300 and 500.

There is no record of leprosy among the early French settlers in Canada. In 1815 the disease was introduced into New Brunswick by a woman from Normandy, who settled in Tracadie on the Gulf of St. Lawrence. The disease soon after appeared in the family of this woman and among her neighbors, and there are to-day about 20 cases in the asylum in this village. In 1892 some cases were discovered in Cape Breton. In South Carolina 17 cases occurred between 1847 and 1882. Fifteen cases are recorded in Charleston during the last ten years, 5 of whom are now living. Next came the focus of leprosy in Minnesota, which came from the Scandinavian immigrants who settled in large numbers during the middle of the last century in the northwestern states. It is known that there were about 170 of these lepers who had the disease when they left Norway. There are about 30 cases in their descendants now living.

The Pacific coast has been invaded by lepers from the far East and from the Pacific islands. San Francisco has lepers from many countries of the world. Texas and Florida have also of late years furnished their quota of lepers.

Besides these foci of leprosy, cases of the disease are found among the immigrants in almost all of the larger cities. A large number of these cases occur among the Chinese. Dr. Morrow states that he has seen in New York about 150 cases during the last thirty years. Official records of the disease are apt to underestimate the numbers. A careful attempt to estimate the number of cases in this country, made by the Marine-Hospital Service in 1902, gives a total of 278 cases, of which more than half were in Louisiana. Two thirds of these were said to have acquired the disease in the United States. This, according to Pollitzer, is probably less than half the true number in this country.

The second paper, by Dyer, of New Orleans, treated of the sociological aspects of leprosy and the question of segregation. At the present time all the countries of Europe have provided for lepers when discovered, including even Russia. India cares for the children of lepers also, and Japan, where the number of lepers is estimated at 20,000, has all of them segregated. Most of the West Indian islands have provided for leprosy, and in South America a few, not many, of the countries have followed suit. Tracadie in New Brunswick and D'Arcy Island in British Columbia have also made provision. In the Philippines and in Guam, the United States has provided hospitals for over 3,000 lepers.

The United States government has so far done practically nothing. Some of the states have, however, taken legislative action, among them Minnesota, Iowa, Oregon and California. In New York a few lepers have been sent to an island and then allowed to escape. Louisana is the only state that has regularly provided for lepers since 1894. At the State Home for lepers, 200 patients have been admitted in sixteen years, and there are at present nearly 70 inmates. States nearby, such as Mississippi and Texas, have numerous cases which are under no control, and from which the disease has been known to spread to others. The writer emphasizes the fact that segregation is considered essential in almost every country except the United States, and has been endorsed by the European leper congresses, consisting of delegates from almost all the leprous centers. Nevertheless, Congress has refused to consider the question of a national asylum. Dyer considers that such a national asylum for all lepers should be instituted; that not all cases of leprosy, however, need to be segregated, as, for instance, those who have survived the disease and who show only trophic changes and mutilations. In these cases there is no danger to others and no need of isolation treatment for themselves.

In Louisiana almost all the patients go to the home willingly, without need of coercion, influenced partly by the possibility of a cure.

The third paper was by Drs. Duval and Gurd, of New Orleans, on experimental leprosy and its bearing on serum therapy.

The writers regard the cultivation of the leprosy bacillus in pure cultures as an assured fact, although the pure cultures on artificial media are attained with great difficulty. It is necessary to place large quantities of the infected tissue upon the culture medium to insure growth. They claim to have succeeded in getting pure cultures of the leprosy bacillus from the cutaneous nodules in 8 cases of leprosy, in 2 cases from the nasal discharge in leprosy, and from experimental lesions in mice and monkeys. They find that cultures will remain alive and virulent for months under unfavorable conditions, and this explains much not before understood as to the transmission of the disease; why, for instance, the disease appears in houses where a leper has previously lived. They regard direct inoculation as possible, but not the usual mode of transmission. They consider from their investigations that the mucous membrane of the naso-pharynx is the point of entrance of the bacilli, and also the chief source of the spread of the disease.

### CANCER IN TAR WORKERS.[3]

Schamberg, of Philadelphia, read an interesting paper on this subject before the American Dermatological Association at its meeting in Washington. Cancer of the skin has been, as is well

[3] Jour. Cutan. Dis., December, 1910.

known, recognized for a long time as occurring in chimney-sweeps, and in tar and paraffine workers. Schamberg describes 5 cases occurring in men working in a tar factory, one of the largest institutions of its kind in the country.

The first patient, who sought aid because of the distress caused by the skin trouble, was an Irishman forty-five years old, who had for twenty years been engaged in saturating paper with tar at a temperature of 240° F. His hands and arms were constantly covered with coal tar on account of his work, which was that of drawing the wet tar paper through rollers. He had developed his present affection two years before and it had been steadily growing worse. There were red patches on the arms from the elbows to the wrists, varying from a pin's head to a fingernail in size and somewhat keratosic. Slight ulceration was seen when the crusts were removed and there were some scars. There were no lesions on the palms nor above the elbows, and the only other part of the body affected was the scrotum, where there was a large ulcerated lesion indurated at the edge, which was increasing steadily in size. There were also two smaller lesions upon the scrotum which had appeared more recently. There were comedo-like plugs in the follicles of the skin of the proximal phalanges.

Upon visiting the tar works where the patient was employed, about 20 men were examined who had to become besmeared with tar in the manufacture of tar paper. There was in several a mild acneiform eruption of the arms, and some of them stated that they often had outbreaks of "yellow heads" on their arms, which soon disappeared. Four other cases were found which presented the appearances of tar cancer on the hands and arms, mingled usually with keratoses and comedones. These cases of tar cancer seemed to occur usually in those who had reached or passed middle life.

A miscroscopic examination (of Case I) showed a great thickening of the horny layer which projected above the level of the skin. There was a marked hyperplasia of the Malpighian layer, and the epithelial cells showed in many places a perinuclear vacuolation. The blood vessels in the papillary layer of the corium were greatly distended and surrounded with masses of round cells. Epithelial nests snared off are seen in several places, together with horny pearls. There were various cell changes in the epithelial cells, some of them surrounded by clear spaces and containing one or several eosinophilic cells.

Chimney-sweep's cancer was first described by Pott in 1775. The cases are chiefly in England and it seems to be almost unknown in other countries. In nearly all the cases the scrotum was affected, sometimes also the extremities. It is a rare affection and is said to have become less common since an act was passed prohibiting children from cleaning chimneys and since economic conditions have been changed.

Tar and paraffine cancer was first reported by Volkmann in 1873. There is a preliminary stage of an acute character that is characterized by aceniform or larger papules. Often there are confluent nodules and boils. After a few months there is an increased formation of epidermis and an increased secretion of the sebaceous glands. Then a horny thickening occurs, with multiple warty growths that become epitheliomatous. The forearms and the scrotum are the usual seats of these cancerous changes. Three cases of cancer in men who worked in coal briquette factories were reported by Zweig.

Schamberg has tabulated 24 cases of cancer in chimney-sweepers, of which there was cancer of the scrotum in 19; of 22 cases of tar and paraffine cancer, there was cancer of the scrotum in 19. As to the outcome in these cases, it was fatal in 4 of the cases of sweep's cancer, and in 7 of the cases of tar and paraffine cancer; but the result was not known in many of the cases.

As to the degree of malignancy, the tendency to spontaneous involution was a marked feature of the tar cancers. Many of the lesions were mechanically destroyed by the patients themselves. The feeble malignancy of chimney-sweep's cancer used to be emphasized, but a number of deaths have been recorded. On the other hand, tar and paraffine cancer are more likely to prove malignant.

In tobacco juice and smoke there is contained an irritant somewhat similar to that of tar and soot, and this has been considered the cause of some of the cases of cancer of the lips and tongue, especially in the case of youthful patients who chewed tobacco. Hence an analogy has been drawn by Thiersch between the influence of tobacco smoking on the lip and that of tar and soot on the scrotum. Of 98 cases of tongue cancer noted by Andrew, of Glasgow, 88 occurred in males.

It must be admitted that there is some irritant in paraffine, cold tar and soot that after long years has the power of stimulating epithelial growth and causing cancer.

Schamberg suggests that, inasmuch as cancer may follow exposure to the x-rays and to radium, the cancer produced by coal tar may be due to the existence of radio-activity in the latter product, and some slight experimentation of his own points in that direction. Furthermore, as only certain kinds of coal seem to possess this property of epithelial proliferation, it is possible that these kinds only have a radio-active property.

### PERIODICAL FALLING OF THE HAIR — A RARE CASE.[4]

Vignolo-Lutati reports a case of this rare affection which had previously been described by Klotz and Ledermann. In the cases reported by the latter writers, the hair fell during the summer and grew again in the winter. The case reported by Vignolo-Lutati was that of a girl of sixteen years. When only fifteen months old, during the autumn, she presented in the occipital region several round bald areas, similar to alopecia areata, which soon became confluent and extended until the whole scalp had become denuded of hair. In the spring there was a return of the growth,

[4] Monatsh. für prakt. Dermat., 1910, t. 51, p. 304.

so that the scalp was well covered, and since then every year had seen a repetition of the same phenomena, the hair falling in the autumn and growing in again during the spring season. The case was carefully followed for two and one-half years, the phenomena that have been described recurring regularly at the same season. It was noted that at no time were there any inflammatory appearances either clinically or histologically. As to the physical condition of the child, she was well developed but rather anemic. It is difficult to understand what the underlying cause of this peculiar affection may be. It is suggested by the writer that it may be an intermittent trophoneurosis, possibly caused by a toxin of microbic origin, or of unknown nature.

## Reports of Societies.

### AMERICAN UROLOGICAL ASSOCIATION.

Winter Meeting of the New England Branch, Boston Medical Library, March 7, 1911.

*President*, Dr. Paul Thorndike, Boston.
*Secretary*, Dr. R. F. O'Neil, Boston.

*Demonstration of Specimens.*

MISPLACED LEFT KIDNEY.

Dr. W. W. Townsend, Rutland, Vt. Through the courtesy of Dr. Stone, our state pathologist, I have the pleasure of presenting a specimen of misplaced left kidney. This kidney was taken from a subject who had been murdered, and the kidneys were being observed in the regular routine of the autopsy. The right kidney was in its normal position, the left was found to be lying below the brim of the true pelvis and to the inner side of the psoas magnus muscle. The bifurcation of the aorta, as you will observe, is also at the brim of the pelvis, and at this point there were thrown off two renal arteries, one of which cuts across the upper pole of the kidney, which gives it the appearance of a lobulated kidney. The bifurcation of the vena cava is below that of the aorta, and the common iliac veins take a circuitous route through the pelvis and finally join the iliac arteries after they have divided into the external and internal branches. The ureter, as shown in this specimen, is of normal length and was cut off close to the bladder, leaving, as you will note, a piece of the bladder musculature attached. Unfortunately, the bladder was not preserved. I show this specimen for its anatomic rather than its pathologic interest.

CALCULOUS HYDRONEPHROSIS.

This other Kidney specimen was likewise taken from an individual in the general routine of a medico-legal autopsy, and is of interest to us as it further confirms the knowledge that we already have that a calculus may exist in a kidney pelvis without producing any subjective or objective symptoms in the individual. The hydronephrosis was occasioned in this instance by the calculus protruding into the ureter, thus obstructing the urinary outflow. When this calculus was discovered by Dr. Stone, he preserved the urine in the bladder, and a microscopical and chemical analysis of the same was absolutely negative. The physician who had attended the individual during his lifetime was present at the autopsy and reported that the man had never complained to him of any renal or bladder symptoms whatsoever.

HYPERNEPHROMA.

Dr. A. L. Chute, Boston. I have two specimens I should like to show: One is of a hypernephroma that shows a large amount of hemorrhage into the growth itself. The tumor tissue is represented by the narrow border, while the large mass is hemorrhage into it. The only symptoms that this mass caused were hematuria and a little colicky pain, due to the passage of clots along the ureter.

CALCULOUS PYONEPHROSIS.

The second specimen is an example of pus kidney due to a stone blocking the ureter. I have opened the pelvis and the stone may be seen blocking it just at the origin of the ureter. Besides this there were two loose stones in the kidney which was simply a large pus cavity. This specimen is from a women who had had six previous operations. The first was for acute appendicitis with abscess. The others were for pain in her left loin and pelvis. This pain persisted until I removed the kidney. It illustrates how easy it is to refer pain arising in a kidney to other organs.

CARCINOMA OF THE KIDNEY AND UPPER END OF URETER.

Dr. Paul Thorndike. This patient, a fragile old lady of seventy-two, had no clinical history up to the time hematuria began, a few weeks ago. Cystoscopy showed a normal bladder. Examination showed a mass in the right kidney region, more prominent in front than from behind. The mass was believed to be a hypernephroma. Operation showed it to be a kidney almost destroyed by hydronephrosis, the latter condition being caused by an obstructing mass of cancer at the upper end of the ureter and practically blocking it. In the cortex of the kidney were secondary metastatic areas of carcinoma spread out in a fan shape and suggesting the similar condition so often found in septic cases. It is very improbable that the cancerous mass at the end of the ureter is primary and that the other masses are metastatic from it, though this might be possible. It is more probable that the primary focus of disease is still undiscovered and lies in some other part of the body.

CANCER OF THE BLADDER.

This stone was found, at operation, embedded in a large thickened indurated mass of tissue, involving the right wall of the bladder. Other stones were loose in the bladder. This stone lay encysted in the bladder wall like a jewel in a ring setting. It was easily removed. A bit of tissue removed from its surrounding proved to be epidermoid carcinoma. It seems an admirable illustration of the fact that the constant irritation of a stone in the bladder may and does lead to the development of cancer.

ATYPICAL HYDROCELE SAC.

This specimen was removed from a middle-aged man supposed to be suffering from simple hydrocele. At operation, two sacs were found; the one the normal hydrocele sac of the tunica enclosing a second sac with a thickened infected wall but containing a bloody fluid. It was at first believed by the pathologists that this second sac was congenital and was taking the place of the epididymis and was perhaps a dilatation of congenital ducts. It is, however, more probable that the second sac was simply an offshot from the first, caused by an inflammatory process due to infection, the infection presumably caused by the use of trocars in tapping the original hydrocele.

### MULTIPLE VESICAL CALCULI.

These fifty-two stones were removed at one sitting, through a suprapubic opening from the bladder of an elderly man. They lay covering the floor of the bladder behind a slightly enlarged prostate, and only eight of them could be seen on cystoscopic examination. Some of them are faceted and all must have existed for a considerable time. They are reported merely because of the rarity of such numbers of stones existing in the bladder at one time.

### SPECIMEN OF HYDRONEPHROSIS DUE TO BLOCKING OF THE PELVIC END OF THE URETER BY A CALCULUS.

DR. F. B. LUND. This specimen is a kidney removed from an Italian twenty years of age who had had attacks of pain in his left side since childhood. The tumor in the side had been felt to come and go and had been diagnosed as hydronephrosis. Blood in his urine indicated a stone in the kidney. We had a rather poor x-ray, which showed, apparently, a stone in the pelvis of the kidney. The specimen, as you see, shows this stone with a nipple-like projection such as that mentioned by Dr. Eisendrath in his discussion. Dilatation of the infundibula and calices of the kidney is evident and the cortex has been at places very much thinned out. The pelvis itself was not dilated to nearly the extent of the rest of the kidney in this case. As will be seen, there are two stones in the calices which did not show in the x-ray. It seemed wiser, in this case, on account of the pathological condition of the kidney to remove the kidney instead of simply removing the obstructing stone. If the latter procedure had been carried out, it is very doubtful whether the other stones would have been found. The patient has made an excellent recovery.

### DISCUSSION.

DR. DANIEL N. EISENDRATH, Chicago. In regard to the specimens that Dr. Thorndike showed, it strikes me that the lymphatic mode of infection would explain that case better than a general infection with metastases. It seems to me that if a patient has a primary growth in the body and a scattering of the carcinomas, causing metastases in the kidney, that there would be more symptoms present. Secondly, from the anatomical standpoint, I do not think we appreciate the mode of conveyance of the infection from the bladder to the kidney. I am just working on this subject experimentally, namely, the anatomical routes which infection takes in traveling from the bladder to the kidneys. It seems to me from examination of this kidney that the explanation would be more plausible from the lymphatics.

A metastatic carcinoma shows itself in the cortex of the kidney. The renal vessels are terminal arteries and a carcinoma would be deposited in the cortical region. The boundaries would be down in the medullary region. A secondary lymphatic route would explain the case.

Dr. Lund's specimen of hydronephrosis, due to a calculus blocking the outlet of the pelvis at the ureteropelvic junction, emphasizes the point to which Dr. Zuckerkandl, in an article in Vol. 87 of the *Archives für Klinische Chirurgie*, calls attention, namely, that one can very frequently make a diagnosis of the location of such a stone in the uretero-pelvic junction, from the peculiar nipple-like projection which occurs as the result of the calculus becoming wedged into the upper portion of the ureter. In many cases this is easily recognizable in the x-ray picture, such a shadow usually being located opposite either the transverse process of the first or that of the second lumbar vertebra.

Examination of Dr. Lund's specimen will show this peculiar mammary or nipple-like projection, and this was undoubtedly the direct cause of the hydronephrosis.

I would like to ask Dr. Thorndike whether there was any leakage through the ureter in his case?

DR. THORNDIKE. The ureter was not totally obliterated. There was a small amount of blood coming from that ureter. The hydronephrosis contained 6 oz. of fluid. There was probably a little leakage down through.

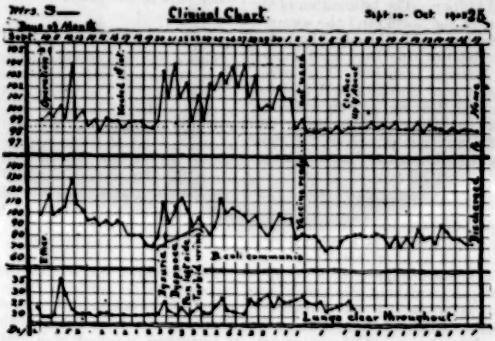
## REPORT OF CASES.

DR. GEORGE O. CLARK, reported

### A CASE OF COLON BACILLUS BACTERIURIA.

This case is reported to prove that vaccines are not a *sine qua non* in the cure (both clinical and bacteriological) of every bacteriuria.

Sept. 10, 1908, Mrs. S. aged thirty years consulted me for pernicious vomiting of pregnancy and multiple fibroids. I did a supravaginal amputation of the uterus, the only operative procedure which seemed feasible. Convalescence to the eleventh day after operation was smooth and the laparotomy wound healed *per primam*. Suddenly high temperature, pulse and urinary symptoms ushered in an acute left-sided pyelitis. Culture showed the presence of B. coli communis and Dr. Hartwell very kindly prepared an autogenous vaccine. The afternoon of the



vaccine's arrival the patient's temperature had dropped from 102 to normal. The vaccine was not used. During the next two weeks the patient's temperature never went above 90° F. and she was then discharged clinically well.

Two weeks ago, twenty-nine months after operation, I catheterized her ureters and obtained the separate urines. The centrifugalized sediments planted in suitable culture media and incubated showed no growth of bacteria.

Recently, I saw out of town a woman in whom the diagnosis of a supposed pelvic condition was obscure. There was a bacteriuria which was known to the attending physician. He had read of, and was impressed by, the reports of the value of vaccines in the treatment of urinary tract infections, and had been told that urotropin was of no use in certain cases. As he was remote from a laboratory that could prepare vaccines, this particular patient was having no treatment for her bacteriuria.

I feel that if that physician had ever seen a case of bacteriuria treated by vaccines alone, and had then had the further advantage of seeing the same case subjected to the effects of bed, diet, diluents and urinary antiseptics as well, any doubt he had as to the value of these latter would soon have vanished. They must not be ignored; as in this reported case, they may effect a cure while we are waiting for the vaccines.

Dr. J. D. Barney, Boston, read a paper entitled

THE VALUE OF THE GUINEA PIG TEST IN GENITO-URINARY TUBERCULOSIS.

Dr. J. Bentley Squier, New York, read a paper entitled,

SUPRAPUBIC INTRA-URETHERAL ENUCLEATION OF THE PROSTATE.

DISCUSSION.

Dr. Paul Thorndike, Boston. I wish to say a word in connection with the technic of this suprapubic operation. Some years ago I read an interesting paper from the pen of Mr. Fenwick, of London. He advocated a similar procedure to this: A suprapubic enucleation, not beginning in the bladder, but in the prostatic urethra itself.

I quote from Mr. Fenwick's paper, "I submit that our present technic tends, first, to the destruction of the vesical orificial ring; second, to the wholesale destruction of the prostatic urethra with its afferent seminal ducts; third, to the rough manipulation of the membranous urethra." Mr. Fenwick believes that the essential necessity of any technic, whether suprapubic or perineal, is that the vesical orifice must be left intact and covered by its own mucous membrane, and that the objections quoted above will be obviated by using this intraprostatic method of operating.

As to the method of opening the bladder, I think Dr. Squier's point of opening the bladder as high up and as far away from the symphysis as possible is exceedingly well taken. It is often feasible to open the bladder with a horizontal instead of vertical incision and in this way make an incision as high up on the bladder wall as necessary.

I am not of those who persist in using one technic for all prostatic operating and I believe that both the perineal and suprapubic methods of operating have a large field of usefulness. I am much interested in this suprapubic operation and for several reasons prefer the suprapubic route in some cases. In my hands the suprapubic operation has given results which compare favorably with any others I have ever had and I still enucleate prostates frequently by this method.

Dr. B. Tenney, Boston. I do not think that I have anything of special value to add to the admirable paper of Dr. Squier's.

I began with suprapubic operations some ten or eleven years ago with a man who was referred to me with a stone in his bladder.

He was seventy-two years old and had been operated for hemorrhoids and had a lateral lithotomy for stone six years before. He had been entirely dependent on a catheter for five years. After opening the bladder above the pubes the stone was found in a diverticulum and removed. His prostate projected into the bladder and was removed with some difficulty on account of the adhesions from the old lithotomy, but with little bleeding. His recovery was prompt and perfect in every way. Eleven months later he died from anthrax, and I was able to get the bladder for examination.

The internal sphincter had contracted to a ring a quarter inch in diameter and below this was a space the size of my finger, crossed by many bands in its posterior part, and into which the ejaculatory ducts could be traced apparently patent; at least they both allowed the passage of a probe.

The success of that operation was so perfect that it has been my choice ever since, and Dr. Chase and I have lost but one patient, a man whose removed and remaining tissues were malignant and who died of hemorrhage about thirty hours after the operation.

The only suggestion which I can add to the technic so well described by Dr. Squier is to go through between the recti with the bladder empty and then to distend the bladder with water. It will be seen to rise into the operation wound and can be caught and opened without fear of wounding the peritoneum. Some one has suggested that the distention be done with air to avoid flooding the wound with fluid from an infected bladder. I think I shall try this.

In regard to the difference in mortality between the high and low operations, Dr. Chase and I found in a series of over a thousand cases published in 1906 in the *Journal of the American Medical Association*, that the slight excess of mortality for the suprapubic method was due to "shock and hemorrhage." The source of this hemorrhage becomes of interest. There is a rich plexus of veins under the mucous membrane of the bladder and if this be torn up to any extent, or over a considerable area, the bleeding must be free. I have thought that the enucleation downwards, which is the feature of the perineal operations, may be the reason for the less fatal bleeding and have tried to complete the enucleation laterally and downwards before pulling the prostatic masses up. Since making this little change we have had no disturbing hemorrhage.

Dr. F. B. Lund, Boston. We are greatly indebted to the reader for a very interesting paper in which he has brought out many important points. He has demonstrated the ease and rapidity of the suprapubic operation and has mentioned many minor points of importance, such as the tincture of iodine preparation and the importance of keeping the patient dry, etc.

In regard to the choice of routes: The suprapubic route is easier and perhaps quicker. The perineal enucleation of the prostate, however, does not take much more time, and if a man is devoting himself to time, it can be done in four or five minutes. The better way of doing the perineal operation, however, is to dissect down to the prostate and put in a tractor. With a careful anesthetizer, I do not think the few minutes spent in dissection at the perineal route are wasted, and I feel that the urethra is much less torn and the patients do better where the dissection is done carefully and the urethra opened back of the bulb.

I think that downhill drainage is better than uphill.

Occasionally one gets a sinus from the suprapubic operation as mentioned by the reader in connection with making a bladder incision in a place which it would be convenient to sew up. I do believe the perineal operation is safer, that there is less danger from hemorrhage and that with practice it doesn't take very long to do it. In cases with bad lungs it may be well performed under spinal anesthesia. I recently operated on a feeble asthmatic and dissected out the prostate under spinal anesthesia. He suffered no pain except from traction. When he saw me stand up at the close of the operation with a good deal of blood on my apron he was a good deal surpised to see what had been going on. He had as good a convalescence as anybody I ever saw and I feel that spinal anesthesia is a very good resource in prostate cases where general anesthesia is dangerous.

DR. A. L. CHUTE, Boston. Dr. Squier's convincing presentation of his subject has awakened an enthusiasm that I formerly had for suprapubic prostatectomy. I spent some time in London shortly after Mr. Freyer began advocating suprapubic enucleation of the prostate and had the opportunity of seeing a number of these operations at St. Peter's Hospital by Mr. Freyer and his colleagues. On my return I began to do them, but the results were not good. I lost several patients, and while they did not die of hemorrhage, I felt convinced that the bleeding was a factor in the fatal outcome. A part of my mortality I now believe was due to an insufficient appreciation of the importance of a thorough pre-operative renal preparation; a part to the fact that I had several especially poor risks. Disappointed with the suprapubic operation, I turned to the perineal, which I found gave a much lesser mortality, so that I have come to reserve the suprapubic operation for those patients who present large stones. Even in this class of cases it has not been an unqualified success in my hands. For instance in the patient who presented this calculus which weighs about 3 oz., I removed the stone suprapubically, but could not remove the prostate, which was of the small fibrous variety. Later I did a perineal prostatectomy and the patient made a good recovery.

Dr. Squier evidently finds little trouble with the suprapubic removal of these small prostates. The difficulty that I have encountered in this direction has been one of my great objections to the suprapubic operation, though I believe Dr. Squier's technic largely does away with this objection.

It is true that with the perineal operation we may have incontinence, but I believe that this is always due to faulty technic. Instead of opening the membranous urethra, I practically always open the urethra through the tip of the prostate. I believe by so doing one avoids the possibility of direct injury to the compressor urethræ as well as any disturbance of its function that may arise through scar formation, and, therefore, any possibility of incontinence. While there is often incontinence for a time following operation, I know of none of my cases in which this incontinence has been lasting.

It is certainly possible in doing the perineal operation to leave little intravesical tabs, but this again is due to faulty technic, as one should always explore with his finger the region of the bladder outlet to make sure there are no intravesical projections remaining.

I feel that one great advantage of the perineal operation over the suprapubic is the much more definite control of hemorrhage that one has. In the perineal operation you leave everything either tied or packed as a part of the regular routine. In the suprapubic you close up when there is still a pretty free oozing. Usually it stops, but if it does not, as happens in the occasional case, you may have serious trouble.

DR. H. CABOT, Boston. I desire particularly to thank Dr. Squier for his clear, forceful and illuminating paper. While I do not assume that he regards the suprapubic operation as the operation of election for all cases, I am led to believe that he employs it much more commonly than the perineal route. My own experience has led me to believe that there are more or less distinct indications for the selection of one route or the other and that the best practice will employ both operations. Furthermore, it seems to me that in spite of the enormous improvement in surgery in the treatment of this disease, there are still patients who had better be left in possession of their prostates. The selection of these cases depends upon our ability to demonstrate with considerable accuracy the functional capacity of the kidneys. I am not prepared to assert that we have as yet functional tests which are infallible, but I believe that the intelligent use of experimental polyuria and the phenolsulphonephthalein test will enable us to avoid operating upon patients in whom the risk is excessive and whose kidney function may be improved by treatment. In my hands the suprapubic operation has required longer confinement to bed than the perineal method and for patients with poor hearts and kidneys the perineal route seems to me the method of election. The conformation of the prostate should also be taken into consideration. Those projecting chiefly into the bladder are best attacked from above. I am much pleased to hear of Dr. Squier's good results in cases of small hard prostate when attacked from above, for I have not been favorably impressed with the results obtained in these cases when operating from below. The greatest drawback to the suprapubic operation has seemed to me to be the liability to troublesome bleeding, and I shall be interested to try Dr. Squier's method of irrigation in preventing this difficulty. I have seen two cases in which the bleeding did not begin until after the operation was completed and they were so troublesome as to require reopening of the bladder. I have not seen troublesome bleeding following the perineal operation. I agree with Dr. Chute that incontinence following perineal operation is due to faulty technic. It seems to me clear that Dr. Squier's success lies in his unusual skill. Many of the bad results are due to unskillful operating, whereby an excessive amount of time is consumed. It is skillful operating rather than the route selected which will give good results. The perineal operation is more likely to leave bands and tabs of mucous membrane and is, I think, followed by more imperfect results than the suprapubic. On the other hand, I am strongly of the impression that the latter method will be found to show a distinctly higher mortality.

DR. A. MITCHELL, JR., Portland, Me. I am very glad indeed to have had the opportunity of hearing this most interesting paper and discussion. In regard to my experience with suprapubic prostatectomy, my results have been more satisfactory by this method than by the perineal route, and have employed it in the large majority of cases.

I have not been as fortunate as Dr. Squier in so easily controlling hemorrhage after this operation. In a number of instances it has caused me much anxiety, and while I cannot say that I have actually lost a case from hemorrhage alone, it has been a contributory cause. I have been looking for a method of coping with it satisfactorily. While in New York last June I saw Dr. James Pedersen perform a suprapubic prostatectomy. He packed the cavity left by the enucleation of the gland and a portion of the bladder

with long narrow strips of gauze, leaving the ends protruding from the incision; he also employed the usual large drainage tube.

This appeared to me an excellent plan, and I followed it in my cases. In one instance when the bleeding was unusually profuse, the pressure from the gauze strips was not sufficient to control it. The idea came to me that the method sometimes used in checking hemorrhage from the posterior nares might be employed. Accordingly a rubber catheter was passed into the bladder through the urethra and its proximal end drawn out through the incision; after packing the cavity with gauze strips a larger strip was sewn to the catheter; traction was then made on the distal end and the gauze drawn through the incision into the bladder and brought into firm contact with the gauze strips previously introduced; the bleeding was checked very satisfactorily.

I now follow this plan as a matter of routine; having as large a catheter as possible fastened into the urethra before the patient is anesthetized. After the enucleation is accomplished, I do not devote much time in controlling the hemorrhage by hot irrigations, but draw the catheter up through the incision, pack the cavity carefully with the strips of gauze; these are made about an inch and a half wide and several yards long, and are introduced so that they surround the catheter as it lies in the cavity; I also partially fill the bladder at its base with the gauze, a sufficient amount to form a good-sized tampon. I then sew to the catheter a larger strip of gauze, and pull it down into the bladder, guiding it carefully with my finger. Since employing this method have never had difficulty with hemorrhage.

I found in a number of cases the greater portion of the urine drained through the catheter, keeping the patient comparatively dry; so that of late, after removing the gauze, which is usually the third or fourth day after operation, I cut the strip from the catheter, pull it back in the bladder and retain it in the urethra and allow it to drain in a urinal. I have given up the suprapubic drainage tube as it appears to me unnecessary and retards the healing of the wound.

In the last four cases in which I have employed this method of drainage, with the exception of moderate leakage of urine through the gauze strips protruding through the incision, and which ceased after their removal, the patients have been kept dry by the drainage catheter. I regard this as very important, as one of the great drawbacks to the suprapubic operation has been the discomfort to the patient of wet dressings on the abdomen. In the four cases mentioned, two had voluntary urination without suprapubic leakage within ten days and the wounds, skin incision included, were closed in three weeks. I have been fortunate in these cases and do not expect to secure such prompt results uniformly, but feel that the method mentioned is one that will control hemorrhage successfully and in many cases add much to the comfort of the patient by keeping him dry. I shall continue to employ it as it relieves me from the anxiety of post-operative bleeding.

Dr. G. J. Thomas, Rochester, Minn. Dr. Cabot said in his experience he thought the kind of operation depends upon the lesion found in the prostate. This is the rule that we follow at Rochester in doing operations upon the prostate. Dr. Judd, however, prefers to do a perineal operation except in those cases, as stated above, where the suprapubic operation is indicated. We have never, that I know of, seen a permanent case of incontinence from perineal operation.

We have been treating all of our cases before operation. They are given from ten days to two weeks preliminary preparation, which consists of permanent catheter and frequent irrigations of the bladder. We find that certain patients who do not get this preliminary treatment and who show good urinary findings and with the bladder in fair condition, do not do well after operation, so that within the last two months every patient who comes up for operation on the prostate is given this preliminary treatment.

We have also been using the functional tests, which gives us an additional finding as to the condition of the kidneys.

Dr. Townsend. I would like to ask Dr. Thomas whether or not it is a routine practice to cystoscope in all cases of obstruction.

Dr. Thomas. Yes, every case is cystoscoped where it is possible to pass the instruments. If we get a patient who is a very old man, and where the obstruction is very great, we endeavor to pass small catheters and small steel instruments for a short time until we are able to get the cystoscope into the bladder, so that a correct diagnosis can be made before operation.

Dr. G. O. Clark, Boston. It has given me a great deal of pleasure to hear Dr. Squier's very interesting paper and to see the beautifully prepared specimens. There occur to me two points connected with the suprapubic procedure on which Dr. Squier has not touched and to which I should like to call your attention.

If one discards any such idea as that of the normal prostate having a capsule and a sheath, and instead pictures the normal prostate as a gland developing about the prostatic urethra at the neck of the bladder, then growing into a space bounded by the various fasciæ of the region, but, in its relationship to the bladder, covered by little more than mucous membrane, and tunneled by the ejaculatory ducts, one simplifies one's idea of the anatomic relations of the normal prostate.

Microscopically one finds in the normal prostate glandular tissue of two types, elastic tissue, muscle fibers, both striate and nonstriate, vessels, lymphatics, nerves and a skeleton framework of connective tissue supporting these elements. The muscle fibers predominate in the anterior portion of the gland and in the periphery. They have a sphincteric action, and, in the periphery when contracted, serve to empty the glandular ducts of their secretion. Of glands, the two varieties are the submucous or intra-sphincteric, and the more deeply situated forty or fifty lobules comprising the prostatic glands proper, with longer ducts. At the periphery of this glandular mass the smooth muscle tissue and the connective tissue is relatively abundant, and if the normal prostate had a capsule, it would be this tissue which constituted it. But this tissue is not a true capsule; it is the periphery of the gland holding the gland together, and not readily separated from the rest of the gland. In the normal adult the periphery of the gland is in contact with the adjacent fasciæ; in fact, is intimately bound to them and the supporting hammock which they form, for the prostate is in France called "*la loge prostatique.*"

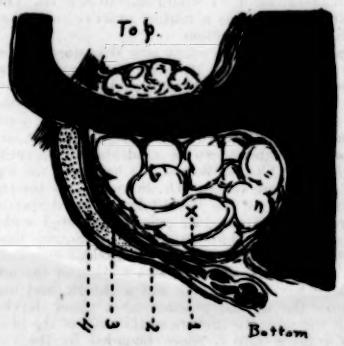
Turning to the anatomy of the pathologic prostate the conditions are apt to be entirely different, and are of fundamental importance to the surgeon, since on the particular type of existing pathology depends the logical choice of operative procedure.

Several times in the morgue I have tried to remove from its hammock the normal prostate. There was no line of cleavage, and to effect a removal the prostate had to be torn out with different tissues adhering. The pathologic small obstructing prostate without glandular enlargement presents a more exaggerated type of this difficulty, and is, I believe, best removed by a perineal rongeuring operation.

Just posterior to the internal meatus may be a second

type of pathologic obstruction — the so-called "third lobe." It is an adenomatous growth upward into the bladder originating in certain glands lying superficially in the prostate just beneath the mucosa or in the mucosa itself. When it is the sole cause of obstruction, it may be easily removed suprapubically. That portion of the prostate lying anterior to the exit of the ejaculatory ducts (in diagram A) very rarely if ever takes part in the obstructive enlargement.

A

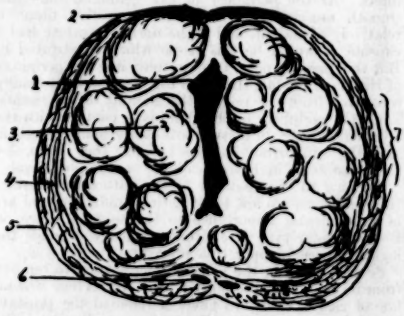



AFTER ALBARRAN.

1. Adenomatous "hypertrophy."
2. Lamellæ of compressed tissue — plane of clearage in suprapubic enucleation.
3. Ejaculatory duct.
4. Portion of prostrate not taking part in obstructive "hypertrophy" — left behind.

In those large obstructing prostates, the so-called cases of hypertrophy, there is again definite adenomatous structure. Some of the deep lobules take on a tumor formation, and in growing exert pressure from the interior tending to compress the periphery of the gland against the surrounding resisting fasciæ. Obviously the least resistance is encountered posterosuperiorly. Probably in the early stage of enlargement, the muscle fibers in the periphery of the gland hypertrophy to some extent because of increasing difficulty in doing their work. Subsequently, they undergo a pressure atrophy together with the other portions of the prostatic glandular tissue which do not take part in the tumorous enlargement. Albarran has shown that this tumorous enlargement frequently, almost constantly, originates in that portion of the prostate which lies posterior[1] to the plane of exit of the ejaculatory ducts, and that the portion anterior[1] to this plane rarely ever takes part in the enlargement; on the contrary, it actually atrophies from pressure during the growth of the tumorous mass, and together with the ejaculatory ducts lies outside the obstructing tumor mass. This peripheral portion, once true prostatic tissue, is now seen to be principally fibrous tissue, generally in several lamellæ; partially investing the obstructing tumor mass, readily split apart and giving the zone of cleavage out of which the tumor mass — the so-called hypertrophy — can be so easily enucleated by the suprapubic route. In this suprapubic enucleation, instead of "removing the prostate in its capsule but leaving its sheath," as Mr. Freyer believed, we leave behind, not only the sheath," but the "capsule" as well, together with the ejaculatory ducts and a certain amount of more or less atrophic but non-obstructing prostatic tissue. In this plane of clearage there are no great blood vessels, consequently serious hemorrhage occurs only when, instead of enucleating between these lamellæ, one tries to enucleate between the "capsule" and the "sheath." In a small percentage of cases, not all of the glandular tissue remaining has atrophied beyond hope of repair. In such case, it is possible for some of the patients so operated on to have conserved their sexual potency.

B.




AFTER ALBARRAN.

1. Urethra.
2. Sphincter.
3. Adenomatous "hypertrophy."
4. Peripheral portion, not taking part in obstructive enlargement — lamellated, giving plane of clearage.
5. So-called capsule — containing gland tissue — fibrous tissue — muscle fibers and (7) vessels.
6. Ejaculatory ducts.

These large obstructing prostates (the term "hypertrophy" seems to be an unfortunate misnomer) are, I believe, best removed by the suprapubic route.

DR. J. BENTLEY SQUIER, of New York (closing discussion). In answer to Dr. Thorndike's inquiry regarding the advisability of making a transverse opening at the bladder: I have never made use of it because I have felt that in view of the anatomical relation of the blood vessels such a method of opening the bladder would, theoretically at least, produce more hemorrhage.

In regard to saving the seminal ducts, I think Dr. Clark's discussion covers this point. If the operation is done properly, they should not be injured, and among the specimens which I have shown to-night are a number in which the patients have demonstrated their virility after operation by impregnating their wives. Specimens 239 and 241 are instances of this.

Dr. Tenney's suggestion as to filling up the bladder after the abdominal incision has been made I think is well worth trying.

In regard to hemorrhage following suprapubic intraurethral enucleation, I may say that I have never had a case in which I found it necessary to pack the bladder, and I believe it would be but rarely necessary if the enucleation is carefully carried out so that the prostate is removed from inside the capsule. In a recent conversation with Dr. Haade, of Breslau, he said that in his hospital he removed prostates by the suprapubic route and closed the bladder and suprapubic wound without a drain. An indwelling catheter was placed in the urethra, and following operation more or less continuous irrigation with ice-water of the bladder was instituted. He says that primary union is the rule,

[1] "Anterior" and "posterior" are here used in the relations they bear in Diagram A.

that the ice-water irrigation makes the patient very comfortable and that they never have cases in which severe hemorrhage takes place.

In regard to starting the patient's anesthesia in the operating room, the advantages are set forth by one of the writers of the recent compilation from St. Mary's Hospital, at Rochester. Among his remarks he says that it is much less terrifying to the patient to let him see the large clean room in which he is to be operated upon rather than to start ether in an anteroom, leaving the idea in his mind that he is going into a place of torture.

Also explain to the patient that as he gets very much less ether there is necessarily less danger to himself.

Dr. Lund says, "Then you do get sinuses after suprapubic" operation. Yes, and you get them after perineal. I do not say this from a small experience in prostatectomy. I have done a great many perineal operations. I am not a one-way prostatectomist, but I have proved to my own satisfaction that in operating suprapubically, if the opening in the bladder is made as I have indicated in my paper, there will be fewer long continued fistulæ.

Dr. Lund's criticism that rapidity of operation might necessarily make it a rough one I do not believe is well taken; at least it has not seemed so to me. Some years ago, in a discussion upon prostatectomy, a prominent New York surgeon said that it required great strength to do a suprapubic prostatectomy. This may be true if one simply tears the prostate out, capsule and everything; but an intra-urethral enucleation, properly done, requires comparatively no exertion, as a simple sweep of the finger is all that is necessary to free the prostate.

Dr. Cabot's point that these patients do not do so well if confined to bed for any length of time either before or after operation, I think is a good one. However, there is no reason why a patient who has had suprapubic prostatectomy performed on him cannot be gotten out of bed early. The abdominal wound is in such a position that hernia rarely develops, and if the abdomen is properly supported by adhesive plaster, I believe the danger of this is practically eliminated.

In closing this discussion, I desire to take the opportunity to express to the New England Branch of the American Urological Association my appreciation of their hospitality and of the interest which they have displayed in my paper. While visiting the hospitals in your city I have been impressed with the scientific work which is being done in urology, and feel that the National Society should be very proud of its New England Branch.

## ASSOCIATION OF AMERICAN PHYSICIANS.

### Twenty-Sixth Annual Meeting held at Atlantic City, N. J., May 9–10, 1911.

(Continued from No. 25, p. 896.)

#### EDEBOHLS' OPERATION IN THE TREATMENT OF CHRONIC BRIGHT'S DISEASE.

Dr. James Tyson, Philadelphia: A study of the four cases of nephritis treated by decapsulation reported in this paper shows that in no case was complete cure affected, notwithstanding the healthy appearance of the patients at certain times after operation. However, the operation is so serviceable in certain instances that it ought to be done more frequently. The conditions which demand it are stubborn persistence of symptoms causing great inconvenience or danger of life, such as permanent dropsy, uremia shown by convulsions or intense headache, anuria and large albuminuria. Operation should not be considered until medical treatment proves unavailing. It is also indicated in perinephritis. Contra-indications are an age of over fifty, valvular heart disease with irregularity of action, extensive cardiovascular changes, or albuminuric retinitis.

#### THE TREATMENT OF CHRONIC NEPHRITIS IN CHILDREN BY EDEBOHLS' OPERATION.

Dr. Henry Koplik, New York: The number of cases operated so far is limited; the operation is not curative, but undertaken only in cases in which relief from the symptoms of nephritis has failed by all other means, medicinal and dietetic. The operation itself does not endanger life. The improvement in the symptoms after operation has been striking in spite of the persistence of urinary signs of marked disease of the kidney. The freedom from symptoms is combined with a status of well-being lasting in some of the cases for a period of years. Exposure or indiscretion will not exempt the operated case from recurrence of edema and other symptoms, but the patients, as in one of the cases reported, recovered promptly and remain well for a time, showing that the operation has not crippled the recuperative powers of the kidney.

#### DISCUSSION.

Dr. G. L. Peabody, New York: It is a matter of interest to me to hear these papers. I have had a number of these cases operated on with satisfactory results as a rule. In one case the operation was done four successive times in a period of two years; after each operation a recurrence of symptoms took place with a marked degree of anasarca closing the boy's eyes so that he could not see. After each operation the improvement was marked and lasted for a number of months. He would disappear from the hospital and then come back again with headache, vomiting and almost complete suppression of urine, and in four instances the symptoms were relieved by removing the capsule which reformed after each operation.

Dr. James Tyson, Philadelphia: I want to add to what Dr. Koplik has said that I do not wish to give the impression that the recovery was always prompt. It was quite delayed in two cases, but it occurred nevertheless. A marked symptom following operation was enormous diuresis, going to show that something must have been occurred consequent on freeing the kidney from pressure or obstruction.

Dr. Lewis A. Conner, New York: In regard to the acute cases I would report one case of severe bichloride poisoning with complete anuria, in which it seemed to me the splitting of the capsule might be justified. There was absolutely no impression made upon the kidney by the operation. That bears out Dr. Koplik's contention that the acute cases are not necessarily the most favorable.

Dr. Tyson: In regard to operating upon the two kidneys: It has been questioned whether there is any advantage in operating upon the two kidneys. In the first and perhaps the most prominent of my cases the kidney was operated on. Four weeks later the second kidney was operated on, but without any particular improvement.

#### FEVER, ITS NATURE AND SIGNIFICANCE.

Drs. Victor C. Vaughan, James G. Cumming and John H. Wright, Ann Arbor, Mich.: In August, 1909, Vaughan, Wheeler and Gidley published in the *Journal of the American Medical Association* a preliminary article upon the subject of protein fever.

In that paper it was shown that continued fever with charts closely simulating those of typical fever can be induced in rabbits by repeated subcutaneous injections of egg-white and certain other proteins; this work has been continued, and it has been demonstrated that by varying the dose and the intervals between doses one can induce an acute, an intermittent, a remittent or a continued fever in rabbits by injections of foreign protein. Furthermore, it has been shown that by repeated intra-abdominal injections of various bacteria, acute fever, followed by immunity, will be produced. The authors will hold that fever results from the parenteral digestion of proteins, and that fever must be regarded as a conservative process, although, like many of nature's processes, it often leads to disaster. Its purpose is the disposal of foreign, dangerous material, and, therefore, it must be regarded as beneficent.

DISCUSSION.

DR. S. J. MELTZER, New York: Do you mean by fever only heat production, or is it meant to include the entire complex, that is the heat dissipation, the effect upon heart beat, the effect upon respiration, etc.?

DR. VAUGHAN: Fever is simply one of the effects of digestion. Increased elimination of nitrogen and salts are other effects. whenever a digestive organ is active there is hyperemia. Whenever a large part of the body is sensitized and elaborating ferment there is an increased destruction of tissue and a consequent increase in respiration. Low temperature as well as high temperature may result from this process. When the protein is broken up so rapidly that the poisonous substances are formed in large amount then the result is low temperature.

THE FUNCTIONAL DIAGNOSIS OF DISEASES OF THE PANCREAS.

DR. WILDER TILESTON, New Haven, Conn.: This paper deals with the results of examination of the stools, of absorption experiments, and of various functional tests in six cases of closure of the pancreatic ducts. The value and frequency of macroscopic masses of fat in the stools as a diagnostic sign. Effect of the administration of large doses of hydrochloric acid with pepsin in a case where the gastric and pancreatic sections were both deficient. Remarks on the diagnosis of insufficiency of the external secretion of the pancreas and its causes.

DISCUSSION.

DR. JOSEPH H. PRATT, Boston: I have carried on metabolism experiments in a number of cases in which obstruction of the pancreatic duct was suspected, and in two cases we were able to verify our diagnosis at autopsy and in one case a cancer at the head of the pancreas was found, and I have made observations on one case in which the fecal contents were obtained at the autopsy. One of my cases was the same one studied by Dr. Tileston and my analysis agreed with his. I came to some conclusions which possibly differ from his.

DR. T. C. JANEWAY, New York: I observed last year a case of a young man with true pancreatic diabetes, that is, diabetes with enormous fat stools and all the evidences of gross destructive of disease of the pancreas. The attempt to treat with pancreagen was unsuccessful. I then resorted to the use of raw pancreas. The patient is taking half an ounce of raw pancreas with good effect on his diabetes and has gained greatly in weight and strength, and, though he looked as though he would die in a few weeks, we have been able to greatly better his condition.

*(To be continued.)*

## Book Reviews.

*Annual Report of the Surgeon-General of the Public Health and Marine-Hospital Service of the United States.* For the Fiscal Year 1910. Washington: Government Printing Office. 1911.

Following close upon the report for 1909 (which was reviewed on page 463 of the issue of the JOURNAL for March 30, 1911) comes this report for the succeeding year, dated Jan. 20, 1911, and describing the operations of the Public Health and Marine-Hospital Service from July 1, 1909, to June 30, 1910. Many of the same activities are noted as in the previous report, and in addition particularly the work done in research on cancer, pellagra and anterior poliomyelitis. There is the usual appendix of tabulated statistics. In stating the needs of the Service, Dr. Wyman, the Surgeon-General, reiterates the necessity of a larger appropriation for the printing and distribution of publications, and particularly urges legislation providing an increase of pay for the commissioned medical corps.

*Bismuth Paste in Chronic Suppurations.* Its Diagnostic Importance and Therapeutic Value. By EMIL G. BECK, M.D., Surgeon to the North Chicago Hospital, Chicago, Ill. With an Introduction by CARL BECK, M.D., and a Chapter on the Application of Bismuth Paste in the Treatment of Chronic Suppuration of the Nasal Accessory Sinuses and the Ear by JOSEPH C. BECK, M.D. With eighty-one engravings, nine diagrammatic illustrations and a colored plate. St. Louis: C. V. Mosby Company. 1910.

Beck states frankly in his preface that the development of the use of bismuth paste is not yet complete, but that its value as an aid in certain surgical procedures, both for diagnosis and treatment, has proven so great that his friends have prevailed upon him to publish the result of his researches.

Well-informed surgeons are aware that the use of bismuth paste has become widespread and popular during the past three or four years. Especially is it effective when injected into sinuses and cavities to serve as an x-ray obstructive, so that through its use we are now able to map out accurately the position of cavities regarding which our knowledge formerly was mainly guesswork. Furthermore, as is well known, bismuth paste is often an efficient surgical dressing. The writer devotes sixteen chapters to the various phases of his subject, and illustrates his writing by eighty-one excellent figures. We regard the book as timely. It corrects many false conceptions regarding the employment of the paste, and suggests many novel and interesting uses. We recommend it especially to surgeons and hospital residents.

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THURSDAY, JUNE 29, 1911

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W. M. LEONARD,
101 TREMONT STREET, BOSTON, MASS.

## PROPOSED AMENDMENT OF PURE FOOD AND DRUG LAW.

IN the issue of the JOURNAL for June 8, we commented editorially on the decision recently rendered by the United States Supreme Court relative to the applicability of the present pure food and drug law to statements as to the supposed or alleged curative properties of proprietary medicines. Shortly after this decision, an act amending the law was introduced before the national House of Representatives; and last week the matter was made the subject of a message from President Taft, which was transmitted to Congress on June 21. This message seems a document which deserves republication, not only for its summary of the history and results of the pure food and drug act, but for its clear and critical statement of fact and argument in the case.

TO THE SENATE AND HOUSE OF REPRESENTATIVES.

"Your attention is respectfully called to the necessity of passing at this session an amendment to the food and drug act of June 30, 1906, which will supplement existing law and prevent the shipment in interstate and foreign commerce and the manufacture and sale within the Territories and the District of Columbia of worthless nostrums labelled with misstatements of fact as to their physiological action — misstatements false and misleading even in the knowledge of those who make them.

"On June 30, 1906, after an agitation of twenty years, the food and drugs act, passed by the Fifty-ninth Congress, received the approval of the President and became law. The purpose of the measure was two-fold — first, to prevent the adulteration of foods and drugs within the jurisdiction of the Federal Government, and, second, to prevent any false labelling of foods and drugs that will deceive the people into the belief that they are securing other than that for which they ask and which they have the right to get.

"The law was received with general satisfaction and has been vigorously enforced. More than 2,000 cases have been prepared for criminal prosecution against the shippers of adulterated or misbranded foods and drugs, and seizures have been made of more than 700 shipments of such articles. More than two-thirds of these cases have been begun since March 4, 1909. Of the criminal cases, more than 800 have terminated favorably to the Government, and of the shipments seized, more than 450 have been condemned and either re-labelled or destroyed. In every case in which the food seized was deleterious to health, it was destroyed. A large number of cases are now pending.

"The Supreme Court has held in a recent decision (United States vs. O. A. Johnson, opinion May 29, 1911) that the food and drugs act does not cover the knowingly false labelling of nostrums as to curative effect or physiological action, and that inquiry under this salutary statute does not by its terms extend in any case to the inefficacy of medicines to work the cures claimed for them on the labels. It follows that, without fear of punishment under the law, unscrupulous persons, knowing the medicines to have no curative or remedial value for the diseases for which they indicate them, may ship in interstate commerce medicines composed of substances possessing any slight physiological action and labelled as cures for diseases which, in the present state of science, are recognized as incurable.

"An evil which menaces the general health of the people strikes at the life of the nation. In my opinion, the sale of dangerously adulterated drugs, or the sale of drugs under knowingly false claims as to their effect in disease, constitutes such an evil and warrants me in calling the matter to the attention of the Congress.

"Fraudulent misrepresentation of the curative value of nostrums not only operate to defraud purchasers, but are a distinct menace to the public health. There are none so credulous as sufferers from disease. The need is urgent for legislation which will prevent the raising of false hopes of speedy cures of serious ailments by misstatements of fact as to worthless mixtures on which the sick will rely while their diseases progress unchecked.

"At the time the food and drugs act was passed, there were current in commerce literally thousands of dangerous frauds labelled as cures for every case of epilepsy, consumption and all lung diseases, cures for all kidney, liver and malarial troubles, cures for diabetes, cures for tumor and cancer, cures for all forms of heart disease; in fact, cures for all the ills known at the present day.

"The labels of many of these so-called cures indicated their use for diseases of children. They were not only utterly useless in the treatment of the disease, but in many cases were positively injurious. If a tithe of these statements had been true, no one with access to

the remedies which bore them need have died from any cause other than accident or old age.

"Unfortunately the statements were not true. The shameful fact is that those who deal in such preparations know they are deceiving credulous and ignorant unfortunates who suffer from some of the greatest ills to which the flesh of this day is subject. No physician of standing in his profession, no matter of what school of medicine he may belong, entertains the slightest idea that any of these preparations will work the wonders promised on the labels.

"Prior to the recent decision of the Supreme Court, the officers charged with the enforcement of the law regarded false and misleading statements concerning the curative value of nostrums as misbranding, and there was a general acquiescence in this view by the proprietors of the nostrums. Many pretended cures, in consequence, were withdrawn from the market, and the proprietors of many other alleged cures eliminated false and extravagant claims from their labels, either voluntarily or under the stimulus of prosecution. Nearly one hundred criminal prosecutions on this charge were concluded in the Federal Courts by pleas of guilty and the imposition of fines. More than 150 cases of the same nature involving some of the rankest frauds by which the American people were ever deceived are pending now, and must be dismissed.

"I fear, if no remedial legislation be granted at this session, that the good which has already been accomplished in regard to these nostrums will be undone and the people of the country will be deprived of a powerful safeguard against dangerous fraud. Of course, as pointed out by the Supreme Court, any attempt to legislate against mere expressions of opinion would be abortive; nevertheless, if knowingly false misstatements of fact as to the effect of the preparations be provided against, the greater part of the evil will be subject to control.

"The statute can be easily amended to include the evil I have described. I recommend that this be done at once as a matter of emergency."

Since the receipt of the above message, another bill amending the pure food and drugs act in accordance with the President's recommendations, has been introduced into the United States Senate.

## CARE AND PREVENTION OF BLINDNESS.

THE eleventh annual convention of the American Association of Workers for the Blind was held last week at the Pennsylvania Institution for the Blind, in Overbrook, near Philadelphia. The opening session on June 23, which was attended by over 300 delegates representing 30 states of the Union, was devoted to the topic, "Recent Experiments in the Employment of the Blind." Extensive exhibits on this subject were made by the Massachusetts and New York Commissions for the Blind. Mr. James J. Daw, of Minneapolis, Minn., read a paper on "Summer Schools for Blind Men." In his address before the evening session, Mr. Jacques Koloubovsky, director of the Princess Marie Alexandrovna Society for Promoting the Welfare of the Blind in Russia, stated that, according to the latest universal Russian census, there are in that country 247,900 blind persons, representing a rate of 19.7 to every 10,000 of population in the empire. This high relative proportion of blindness is largely due to the dense ignorance of the people and to the prevalence among them of ophthalmia neonatorum.

In this connection we wish to call attention to a monograph, of which we have received an advance copy, on "The Prevalence and Prevention of Ophthalmia Neonatorum in Ten Massachusetts Cities." This paper, which is the first of a series to be published by the American Association for the Conservation of Vision, is written by Mr. Henry Copley Greene, of Boston, with a preface by Dr. F. Park Lewis, of Buffalo, N. Y., and represents the results of a study undertaken by the Research Department of the Boston School for Social Workers. The JOURNAL has already made frequent previous comment on the prophylaxis of gonorrheal ophthalmia, and has recently published an editorial on this subject in its issue for Feb. 9. The present monograph by extensive tabulation of statistics corroborates the statements therein made. It is a valuable piece of lay research, and constitutes an excellent exposition of the most important problem involved in the prevention of blindness.

## OPENING OF THE FLOATING HOSPITAL SEASON.

THE annual season of the Boston Floating Hospital opens this week, the first trip being made on Thursday, June 29. This year for the first time it is planned that the hospital boat shall make two excursions every twenty-four hours instead of one, as previously. Except in stormy or very foggy weather, a day trip will be made from 9 A.M. to 4.30 P.M., and a night trip from 7.30 P.M. to 6 A.M. This extension of the work done by the hospital, will require an increase in the number of nurses from 60 to 70. The staff of visiting physicians will be the same as last year. Dr. Edward A. Knowlton will be the acting resident physician, and Dr. Arthur I. Kendall will have charge of the bacteriologic laboratory.

In its announcement, the Board of Trustees states that during the season of 1910 "462 different permanent patients received care for an average of 16 days of 24 hours each, or a total of 7,519 full days' service; 984 day patients made 5,702 day trips; mothers who accompanied their sick children and received instruction in nursing, helping in their care, made 5,649 day trips; 798 day trips were made by well children too small to be left at home by their mothers. This represents a service to the beneficiaries of this work of a total of 19,868 days for the summer of 1910."

The established value of this hospital, not only for charitable service to the poor but as a training-school for nurses and physicians, makes it worthy of cordial encouragement; and it is sincerely to be hoped that its plans for increased usefulness during the coming season may meet with deserved success.

## EXPERIMENTAL MEASLES IN THE MONKEY.

In the issue of the JOURNAL for June 15, we commented on the recent work of Drs. Anderson and Goldberger on "Experimental Measles in the Monkey." In a supplemental note in the weekly report of the United States Public Health and Marine-Hospital Service for June 16, these authors describe their investigation in somewhat greater detail, and announce their further conclusions that the susceptibility of rhesus monkeys to inoculation "with measles with blood from a human case appears at best not to be very great and is subject to considerable individual variation"; and that "the virus of measles gives no visible growth in standard glucose broth in a fermentation tube." All attempts to demonstrate or cultivate the infecting etiologic agent in measles have thus far been unsuccessful.

## MEDICAL NOTES.

PROPOSED ABOLITION OF ABSINTHE IN FRANCE. — Report from Paris on June 15, states that a bill has been introduced before the French Senate prohibiting the manufacture and sale of absinthe in France.

AMERICAN SOCIETY OF TROPICAL MEDICINE. — At the recent meeting of the American Society of Tropical Medicine in New Orleans, La., Dr. Joseph H. White, of the United States Public Health and Marine-Hospital Service, was elected president of the society for the ensuing year.

A CENTENARIAN. — Mrs. Lucy S. Hicky, of Herring Cove, Nova Scotia, died last week in Gloucester, Mass., at the reputed age of one hundred and three. She had been bed-ridden for a number of years. She is survived by one son.

A TENNESSEE DWARF. — Joseph A. Carter, who died last week in Jefferson County, Tennessee, at the age of seventy-three, was reputed to be the smallest adult in that state. He is said to have been only 42 inches in height and to have weighed only 58 lbs. He was presumably a cretin.

CONVICTION FOR OPIUM SMUGGLING. — Report from Binghamton, N. Y., states that on June 23, before the Federal Court in that city, Walter L. Funk was convicted of having smuggled over $100,000 worth of opium across the Canadian border into this country, and was sentenced to four years' imprisonment and a fine of $20,000.

GRADUATION AT LAKESIDE HOSPITAL TRAINING SCHOOL. — On Thursday, May 11, was held at Cleveland, Ohio, the eleventh commencement of the Lakeside Hospital School for Nurses. Diplomas were awarded to thirty candidates. The address to the graduating class was made by Dr. Charles M. Green, of Boston, on "The Personality of a Nurse as a Factor in her Success."

LECTURES BY DR. HRDLICKA. — On June 27, Dr. A. Hrdlicka, of the Smithsonian Institution, Washington, D. C., delivered an address on "The Evolution of Human Teeth and their Racial Differences," before the Alumni of the Dental Department of the University of Buffalo, N. Y. A similar lecture was given by Dr. Hrdlicka on May 25 before the Maryland State Dental Association, at Baltimore, and on June 1, before the Ontario Dental Society, at Toronto, Canada.

INCREASE OF SALARY FOR PUBLIC HEALTH SURGEONS. — Report from Washington, D. C., states that on June 20 the United States Senate passed a bill raising the salaries of surgeons in the Public Health and Marine-Hospital Service as follows:

"The pay of the surgeon-general is raised from $5,000 to $6,000; assistant surgeon-generals from $2,900 to $4,000; senior surgeons from $2,500 to $3,500; surgeons from $2,500 to $3,000; passed assistant surgeons from $2,000 to $2,500, and assistant surgeons from $1,600 to $2,000."

NORTH AMERICAN SANATORIUM FOR SURGICAL TUBERCULOSIS. — The issue of the Philadelphia *North American* for June 20, contains an announcement of the reopening of the North American Sanatorium for the Treatment of Sur-

gical Tuberculosis, in Ventnor, Atlantic City, N. J. This institution is the direct successor of the North American Sanatorium for Convalescent Children, which had been in operation for the past nine years.

"While this institution was founded only with a general view to benefiting poor children, little by little its destined purpose became more clearly defined to those directing it. Eight years of dealing with convalescents led gradually to the specific purpose which was shown as the mission most needed — ministering to children crippled by tuberculosis. In 1909 the sanatorium, after having cared for more than a thousand convalescents in its eight years of service, was restricted to the exclusive use of poor children suffering from surgical tuberculosis."

The new sanatorium will be under the direction of an executive committee consisting of Dr. H. Augustus Wilson, Dr. John B. Carnett, and Dr. William L. Rodman, all of Philadelphia, representing respectively the Jefferson, the University, and the Medico-Chirurgical Hospitals. The resident surgeon is to be Dr. John C. Tull, of Atlantic City; and there will be a large consulting staff of physicians and surgeons from Philadelphia, from Atlantic City, and from Camden, N. J.

NATIONAL ASSOCIATION FOR PREVENTION OF TUBERCULOSIS. — The seventh annual convention of the National Association for the Study and Prevention of Tuberculosis was held last week in Denver, Colo. The annual address, at the opening session on June 21, was made by the president, Dr. William H. Welch, of Baltimore. Addresses were also made by Mr. Edward F. McSweeney, chairman of the board of trustees of the Boston Consumptives' Hospital, on "The Relation of Tuberculosis to the Cost of Living"; by Dr. M. P. Ravenel, director of the Wisconsin State Hygienic laboratory, on "Human Infection with Bovine Tuberculosis"; by Dr. George J. Nelbach, of New York, on "Anti-Tuberculosis Organization"; and by Dr. Edwin A. Locke, of Boston. Among the new directors elected at the business meeting were Dr. James H. Miller, of New York, and Dr. Vincent Y. Bowditch, of Boston. The following resolutions were unanimously adopted by the Association:

"*Whereas*, the care of advanced cases of tuberculosis has been found from experience to be particularly difficult in institutions located at considerable distance from the home of the patient, and

"*Whereas*, the municipality and the county have in most cases been found to be satisfactory units for the care of advanced cases; and

"*Whereas*, the stamping out of tuberculosis depends so largely upon the segregation of advanced cases; therefore be it

"*Resolved*, That the National Association for the Study and Prevention of Tuberculosis approves a plan whereby municipalities and counties shall be encouraged to erect satisfactory institutions for the treatment of advanced cases; and further,

"*Resolved*, That this Association approves a plan whereby municipalities and counties shall be encouraged to establish dispensaries for the discovery, treatment and prevention of cases of tuberculosis."

## BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, June 27, 1911, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 29, scarlatina 21, typhoid fever 10, measles 91, smallpox 0, tuberculosis 69.

The death-rate of the reported deaths for the week ending June 27, 1911, was 13.54.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, noon, June 24, 1911, was 177, against 178 the corresponding week of last year, showing a decrease of 1 death, and making the death-rate for the week, 13.40. Of this number 94 were males and 83 were females; 174 were white and 3 colored; 110 were born in the United States, 61 in foreign countries and 6 unknown; 42 were of American parentage, 112 of foreign parentage and 23 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 37 cases and 2 deaths; scarlatina, 27 cases and 0 deaths; typhoid fever, 15 cases and 1 death; measles, 97 cases and 4 deaths; tuberculosis, 66 cases and 23 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 14, whooping cough 2, heart disease 19, bronchitis 3. There were 15 deaths from violent causes. The number of children who died under one year was 32; the number under five years, 47. The number of persons who died over sixty years of age was 52. The deaths in hospitals and public institutions were 79.

SENTENCE FOR USING COCAINE. — Before the Municipal Court in Boston last week, a resident of this city was sentenced to six months in the House of Correction for having cocaine in his possession.

Bequest to Free Home for Consumptives. — The will of the late James D. Casey, which was filed for probate last week in the Norfolk County Court at Dedham, Mass., contains a bequest of $300 to the Free Home for Consumptives, Quincy Street, Dorchester. A "country holiday festival" for the benefit of this institution was held in Boston on June 24.

Industrial School for Deformed Children. — At the annual graduation exercises, on June 22, of the Industrial School for Crippled and Deformed Children, Boston, diplomas were presented to six pupils by Dr. James S. Stone, of this city, who also announced that the trustees of the institution have purchased land adjacent to the present building for the purpose of future enlargement of the school.

Commencement at Yale. — At the annual commencement of Yale University last week, the honorary degree of Sc.D. was conferred on Dr. William H. Howell, of Baltimore, dean of the Johns Hopkins Medical School, and professor of physiology at that institution. The annual address to the graduating class of the Yale Medical School was made by Dr. Walter B. Cannon, of Boston, on "The Career of the Scientific Investigator."

Open-Air School for Children. — The Women's Municipal League of Boston announces that its Committee on Open-Air Schools "is again planning to hold an open-air school at Castle Island through July and August of this summer, hoping to start with an enrolment of two hundred children, now being selected for this purpose by Dr. Harrington, physical director of public schools. These children are from seven to eleven years old, and will be under the supervision of the same head teacher as last year." To meet the expenses of this school, the sum of $2,000 will be needed, and the committee makes urgent appeal for subscriptions to this amount.

Annual Meeting of Maine Medical Society. — The annual meeting of the Maine Medical Society was held at Augusta, Me., on June 28 and 29. There were morning and afternoon sessions on both days. Following the afternoon session on June 28, the members were entertained on the annual outing as guests of the Kennebec County Medical Society. Among the papers read at the afternoon session on June 29 was one by Dr. Charles L. Scudder, of Boston, on "The Surgical Treatment of Gastric Ulcer." The annual banquet of the society was held on the evening of June 29, and following it the annual oration was delivered by Dr. Henry A. Christian, of Boston, on "Modern Methods of Clinical Investigation in Relation to Hospital Organization."

### NEW YORK.

New Tuberculosis Hospital in Poughkeepsie. — A new hospital for tuberculous patients has recently been erected in Poughkeepsie, N. Y. with the sum of $50,000 which was raised largely by the Young Women's Christian Association of that city.

Junior Sea Breeze. — The "Junior Sea Breeze," at which sick babies and their mothers are cared for in tents, was opened for the season on the grounds of the Rockefeller Institute, 64th street and the East River, on June 19. This camp, with an efficient corps of physicians and trained nurses, is conducted, like "Sea Breeze" at Coney Island, by the New York Association for the Improvement of the Condition of the Poor.

Recent Honorary Degrees. — Among the New York men upon whom honorary degrees were conferred at recent university commencements were the following: Prof. Veranus A. Moore, of Cornell University, head of the Veterinary Department of New York State, Doctor of Veterinary Medicine by the University of Pennsylvania; Dr. William Warner Hoppin, of New York, Doctor of Literature by Brown University.

Trial of a Christian Science Healer. — Wentworth B. Winslow, the Christian Science healer who some time ago was arrested at the instance of the County Medical Society on the charge of practising medicine without a license, was on June 19 held by Magistrate Kernochan for trial in the Court of Special Sessions. In his brief Mr. Vandiver, counsel for the society said, "The practice of belief in Almighty God and in the religious tenets of the churches has never been construed by any court in America to be a business, a vocation, a profession; nor has any court in America ever countenanced pseudo-religious practices in defiance of established law. The defendant was neither conducting an eleemosynary institution nor a church; he was neither preaching nor teaching; he was not in the sanctuary of the faith. On the contrary, he was in a suite of offices in an office building, with his name on the door, conducting the business of receiving

all comers, and selling them an intangible something for tangible specie. This was not religion; it was business. Similar business might be opened by anyone under the pretense of carrying out the tenets of a religious faith." The magistrate, in announcing his decision, expressed his full concurrence in the opinion declared by Magistrate Freschi in the similar Cole case, that the practice of Eddyite healing for money is a violation of the law in New York State.

## Current Literature.

### MEDICAL RECORD.

JUNE 17, 1911.

1. MEYER, W. *The New Operating Pavilion for Thoracic Surgery at the German Hospital, New York.*
2. v. RUCK, S. *The Rational Treatment of Laryngeal Tuberculosis.*
3. CYRIAX, E. F. *On Reflex Contraction of Muscles Associated with Pulmonary Disease. (Preliminary Communication.)*
4. TAYLOR, H. C. *Incontinence of Urine in Women.*
5. JENNINGS, W. B. *Criminal Abortion. From the Practitioners' Point of View.*
6. SOLOMON, M. *Report of a Pronounced Case of Splenomyelogenous Leukemia with Autopsy.*
7. *HUFFMAN, O. V. *The Etiology of Epidemic Poliomyelitis and Its Possible Relation to Beriberi.*
8. FERNANDEZ, F. M. *The Distribution of Trachoma in Cuba. With Notes in Regard to a New Procedure in the Treatment.*

7. Huffman writes a suggestive paper on the etiology of epidemic poliomyelitis and draws some striking comparisons between this disease and beriberi (epidemic polyneuritis). Seaports, he says, are usually the focus for epidemics, but inland epidemics may follow. It may be that the virus is spread by a mosquito or insect imported from the tropics with fruit. The incidence of poliomyelitis in domestic animals should make us suspect food. For many years beriberi has been associated with a diet of rice. The fact that the epidemic of poliomyelitis in New York in 1907 was preceded by a visit of Brazilian warships with beriberi present among the crew might be significant. We are accustomed to consider neuritis very distinct from any lesion in the cord, yet the axis cylinder process in the nerve and the cell body in the cord are one cell — the neuron. [L. D. C.]

### NEW YORK MEDICAL JOURNAL.

JUNE 10, 1911.

1. BISHOP, L. F. *A Review of Methods of Examination in Heart and Blood-Vessel Diseases, with Special Reference to the Discovery of Therapeutic Indications.*
2. SATTERTHWAITE, T. E. *A Polygraphic Machine, Recording Automatically.*
3. ABRAHAMS, R. *Stethoscopic Examinations.*
4. COLLINS, H. D. *Circulatory Disturbances of the Mesenteric Vessels.*
5. BOGGS, R. H. *The Radiographical Examination of the Gastro-Intestinal Tract.*
6. *CLARK, W. L. *A Preliminary Report upon the Destruction of Surface and Cavity Neoplasms by Desiccation.*
7. KORSHET, M. *Diseases of Occupation.*
8. COUGHLIN, R. E. *Involvement of the Trachea, Lungs and Pleura in Grippe.*
9. LOURIA, L. *Acute Hematogenous Infections of the Kidney and Pyelitis of Pregnancy. Their Medical Treatment.*

6. Clark makes a preliminary report on an electrical method whereby abnormal tissue may be destroyed by rapid depletion of its fluid element. He states that a specialized static current is capable of producing superficial or deep destruction of tissue by desiccation. This current has sterilizing, deodorant, styptic and stimulating properties. It has no particular affinity for abnormal tissue, but the size of the area of destruction can be easily controlled. It is operative in all accessible lesions and works from without inward. [L. D. C.]

JUNE 17, 1911.

1. WALSH, J. J., AND WALSH, J. P. *Prescriptions Old and New.*
2. BUTTER, G. F. *Twilight Talks with the Doctor.*
3. ROHDENBURG, G. L., AND BULLOCK, F. D. *The Effects of Certain Chemicals on the Type of Tissue Resulting from Chronic Irritation.*
4. ROSENBAUM, G. *An Obscure Case of Miliary Tuberculosis (Pulmonic Type) Diagnosticated by the X-Ray.*
5. BROWN, H. A. *Mortality from Venereal Diseases.*
6. GLASGOW, M. *Sidelights on the Social Peril.*
7. TORRANCE, G. *Foramitti's "Tubulization" Method of Nerve Suture.*
8. ROYSTER, H. A. *Rupture of the Intestine from a Blow on the Abdomen.*
9. LUBMAN, M. *Amygdalotomy or Amygdalectomy.*

### THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

JUNE 17, 1911.

1. MEARA, F. S. *Diet in Acute Infectious Diseases.*
2. *PFAHLER, G. E. *Gastric and Duodenal Adhesions in the Gall-Bladder Region and their Diagnosis by the Roentgen Rays.*
3. *NATHAN, P. W. *A New and Apparently Successful Method of Treating Metabolic Osteo-arthritis, So-Called Arthritis Deformans.*
4. EDWARDS, A. R. *Abdominal Pain and Tenderness, Muscular Rigidity, etc., in Thoracic Disease — Pneumonia and Pericarditis.*
5. GARRISON, F. H. *The Historical Collection of Medical Classics in the Library of the Surgeon-General's Office.*
6. PRESS, N. J. *Report of a Case of Traumatic Rupture of the Umbilical Cord within the Abdominal Wall at Birth: Recovery.*
7. KENYON, E. L. *A Large Lipoma of the Laryngo-Pharynx: Removal Extra-Orally under Cocaine.*
8. EVANS, N. *Glass Tube in the Male Urethra.*
9. *COLE, H. P., AND WINTHROP, G. J. *The Status of Salvarsan in Pellagra Based on the Reports of Twenty-One Collected Cases.*
10. HEKTOEN, L., AND WEAVER, G. H. *Experiments on the Transmission of Scarlet Fever to Monkeys.*
11. LEWIS, M. R., AND LEWIS, W. H. *The Cultivation of Tissues in Salt Solutions.*
12. MOTLEY, P. G., AND NEWBURG, L. H. *The Effect of Injections of Indol and Tyrosin in Experimental Animals.*
13. ESHNER, A. A. *Conjugal Tabes Dorsalis.*
14. *MORRIS, R. T. *The Gastric Weak Line in Wounds of the Abdominal Wall.*
15. GOVER, C. H. *Chronic Lead Poisoning; Report of a Case.*
16. WATSON, H. G. *A New Method of Diagnosis of Acute Intestinal Obstruction by the Stomach Tube.*
17. MULLIGAN, T. D. *Trephining for Apoplexy.*
18. REASONER, M. A. *A Simple Technic for Salvarsan Injection.*

2. Pfahler finds that the adhesions formed in gall-bladder disease often cause definite displacement of the stomach and duodenum which is recognizable by means of the x-ray and a bismuth meal. The evidence of adhesions is best obtained by fluoroscopic view in the upright position, in which the errors of pressure may be eliminated, but plates should also be made for record and detailed study.

3. Nathan finds that patients with arthritis deformans, who have failed to improve under the recognized method of treatment, often get marked improvement from the continued use of thymus extract given in 5-gr. doses three times a day. If taken for a long time marked improve

ment if not cure results. He is unable to explain its action. General nutrition first begins to improve, perhaps after a month's treatment and this is followed by relief from pain and relief from disability.

9. Cole and Winthrop, treating twenty-one cases of pellagra in all stages and types of the disease with salvarsan, find only 33.3% of improvement, lasting seven or more days. The authors feel that this treatment offers no better result than other forms.

14. Morris believes that the sudden breaking open of abdominal wounds after gastric operation, which is often witnessed, is due to trophic or neurovascular disturbance associated with sensory nerve disturbance in the stomach zone of head. [E. H. R.]

### The Lancet.

#### May 13, 1911.

1. *Mott, F. W. *A Lecture on Heredity and Insanity.*
2. *Windle, J. D. *An Address on Abnormal Forms of Breathing in Cases of Angina Pectoris with Pulsus Alternans.*
3. *Bonney, V. *Six Cases of "Utriculoplasty" for Uterine Hemorrhage, one of which was followed by Pregnancy and Labor.*
4. Bell, W. B. *The Nature of Hematocolpos Fluid and the Character of the Obstructing Membrane.*
5. Paterson, H. J. *The Hidden Dangers of Appendicitis: a Plea for Early Operation.*
6. Branson, W. P. S. *Some Unusual Effects of Perforated Gastric Ulcer.*
7. Walker, C. E. *Progress in Cancer Research: a Note on Work in the Research Department of the Glasgow Cancer Hospital.*
8. Forrester, G. P. *The National Insurance Scheme: the Prussian Official Tariff for Medical Attendance.*

1. Mott, in a lengthy article on heredity and insanity, draws the following conclusions, among others: (*a*) It is the tendency to nervous and mental disease which is inherited. (*b*) Alcohol may help but of itself is not the main cause. (*c*) Certain types of insanity may be transmitted with greater frequency than others. (*d*) Mothers transmit insanity far more frequently than do fathers.

2. Windle discusses the "pulsus alternans," pulsus bigeminus, transient and continuous dyspnea, paroxysmal dyspnea, "inverted" and "periodic" forms of breathing and the Cheyne-Stokes breathing as these phenomena occur in angina pectoris. The paper is profusely illustrated with numerous tracings.

3. In those conditions known as chronic fibrostic metritis, etc., associated with persistent bleeding and usually treated by hysterectomy, Bonney believes that the simpler operation of utriculoplasty may be used to advantage. This operation consists of excising a wedge-shaped piece out of the fundus of the uterus and then sewing the remaining halves together so as to form a small miniature uterus. [J. B. H.]

#### May 20, 1911.

1. *Pasteur, W. *Post-Operative Lung Complications.*
2. Savage, G. H. *Mental Disorders and Suicide.*
3. *Moullin, C. M. *The Treatment of Malignant Growths by Radium.*
4. Finzi, N. S. *The Radium Treatment of Cancer: Experiences of over One Hundred Cases.*
5. Hutchinson, T. *Diffuse Lipomata and Animals: Pubic Lipomata in Man and Nuchol Lipomata in Man and Animals.*
6. Davies, F. C. *A Case of Thrombosis of the Superior Vena Cava and Great Veins.*
7. Corner, E. M. *Our Inability to Diagnose Gross Lesions of the Appendix.*
8. Stannus, H. S. *A Case of Ovarian Cyst in a Myasaland Woman.*

1. Pasteur presents a summary of the post-operative lung complications after 3,559 laparotomies. Such complications occur with special frequency after operations above the umbilicus, are more frequent in septic cases, but are often found in clean wounds. They usually develop after the second and before the fourth day, complications arising after the first week usually being connected with septic cases. The facts presented do not support the opinion that after-effects more frequently follow ether than chloroform anesthesia. He discusses in detail a special group of cases of massive collapse of the lung.

3. Finzi discusses the radium treatment of cancer and believes that the greatest value of radium is in removing growths which are apt to become, but which at present are not, malignant. In actually malignant cases its value is limited and slight. [J. B. H.]

#### May 27, 1911.

1. Phillips, S. *An Address on Some Points of Interest Connected with the Exanthemata.*
2. Ulrich, J. *Fifty-Six Cases of Cleft Palate Treated by Operations with Special Reference to the Various Methods of Operation and the After-Results.*
3. Bain, W. *The Pressor Bases of the Urine: The Effect of Age, Diet, and High-Blood Pressure on their Excretion.*
4. Garrod, A. E. *On the Nature of the Connections between Erythemata and Lesions of Joints.*
5. *Stopford-Taylor, Z., and Mackenna, R. W. *Salvarsan in the Treatment of Syphilis.*
6. Groves, E. W. H. *A Case of Spontaneous Fracture of the Leg Bones, of Doubtful Nature, Possibly One of Mycotic Infection.*
7. Carver, A. E. *Acute or Paroxysmal Pulmonary Edema.*
8. Bevan, R. *Notes on a Case of Gastro-Enterostomy after Fifteen Years.*
9. Sanderson, A. E. *A Case of Pneumothorax Complicating Broncho-pneumonia in a Child aged two years.*

5. Stopford-Taylor is an enthusiastic believer in the value of salvarsan in syphilis. He describes his results and presents illustrative cases. He believes that every new case of syphilis should be given Salvarsan and by the intravenous method. [J. B. H.]

### British Medical Journal.

#### May 6, 1911.

1. *Bishop, E. S. *An Address on Hemorrhoids.*
2. *Smith, J. W. *The Operative Treatment of Carcinoma Recti.*
3. Deanesby, E. *Some Practical Points in Operating on the Kidneys and Ureters.*
4. Mumbell, C. B. *Remarks on "Appendicular Dyspepsia," and on the Treatment of Diffused Peritonitis.*
5. Whiteford, C. H. *Deaths following Gastrojejunostomy not Due to the Anastomosis.*
6. Drummond, H. *Remarks on the Pathology and Treatment of Fistulæ.*
7. Wray, G. G. *The Similarity between Acute Abdominal and Acute Pulmonary Conditions.*
8. Strickland, C. *The Mechanism of Transmission of Trypanosoma Lewisi from Rat to Rat by the Rat Flea.*
9. McGavin, L. *A Drainage Tube for Suprapubic Cystotomy, Liver Abscess and Abdominal Cysts.*

1. Bishop concludes that Whitehead's operation is the best method of treating piles so as to be sure that the condition will not recur; in order to do this successfully the whole perineal portion of the internal hemorrhoidal plexus must be removed.

2. Smith presents a table in which he analyzes thirty-four cases of rectal cancer, and discusses the various methods of operation and results, the diagnoses, and selection of cases. In his series there were eight deaths, a mortality of 23.5%. [J. B. H.]

#### May 13, 1911.

1. Renne, G. E. *An Address on Some Aspects of the Functional Derangements of the Nervous System.*
2. *Oliver, T. *A Lecture on Lead Poisoning and the Race.*
3. West, S. *A Clinical Lecture on Granular Kidney and its Surprises.*
4. *Hall, A. J., and Beattie, J. M. *A Fatal Case of Secondary Syphilitic Nephritis: with Remarks.*
5. Matthews, H. *The Vasomotor System in Tabes.*
6. McCall, E. *Two Cases of Congenital Aphasia in Children.*

7. BALL, C. P. *The Treatment of Rheumatic Diseases by Vaccines.*
8. *BARDSWELL, N. D., AND CHAPMAN, J. E. *Some Observations upon the Deep Temperature of the Human Body.*
9. MORRELL, R. A. *The Prescription of Glasses.*
10. YELD, R. A. *The Etiology of Iritis.*

2. Oliver describes the great harm which is being done employees in trades where lead is used. He urges employees to see that existing regulations are carried out and to favor the passage of others.

4. Hall and Beattie describe a rare case of secondary syphilitic nephritis with remarks on the clinical condition and treatment. They briefly review the previously reported cases.

8. Bardswell and Chapman present an interesting paper on the temperature of the human body at rest and after muscular exertion. They prove that a rise in temperature after exercise is frequent in many normal individuals and is not, as has been often stated, a sign of pulmonary tuberculosis, even in a consumptive, nor is such a rise of temperature a definite sign of auto-inoculation. Many healthy consumptives will have a lower temperature after exercise than many normals. The paper is of interest and value. [J. B. H.]

MAY 20, 1911.

1. *BOND, C. J. *Observations on the Nature of the Immunity Reaction.*
2. HATTON, W. A. *The Hulton Colliery Explosion.*
3. PARKER, R. *Two Cases of Severe Injury near the Knee.*
4. STURM, F. P. *Vaginal Hysterectomy for Endometritis.*
5. RHODES, F. S. *A Case of Traumatic Pneumothorax and Pleural Effusion Successfully Treated by Resection.*
6. *JORDAN, A. C. *Duodenal Obstruction as Shown by Radiography.*

*The Therapeutic Committee of the British Medical Association.*

7. MARSHALL, C. R., AND WIGNER, J. H. *Report on the Standardization of Preparations of Indian Hemp.*

1. Bond, in a long article, discusses the complicated problems of the nature of immunity, natural and acquired.

6. Jordan, in a paper illustrated with some excellent x-ray photographs, gives the details of some cases of duodenal obstruction with special reference to the passage of bismuth paste through the pylorus and past the obstruction.

MAY 27, 1911.

*Quacks and Quackery.*

1. DUCKWORTH, D. *Observations on Rational Empiricism and Scientific Medicine; the Boundaries Dividing Them.*
2. *SAUNDBY, R. *Remarks on Food and Feeding.*
3. *BASHFORD, G. E. *Cancer, Credulity and Quackery.*
4. MARSH, H. *Bonesetting.*
5. BYERS, J. *Quackery, with Special Reference to Female Complaints.*
6. PERNET, G. *Skin Diseases and Cosmetics.*
7. TAYLOR, J. H. *The Practice of Medicine and Surgery by Unqualified Persons.*
8. FLEMMING, C. E. S. *Quackery in Rural Districts.*
9. BARNES, E. G. *Unqualified Practice in East Anglia.*
10. ROMER, F. *Bonesetting and the Treatment of Painful Joints.*

2. Saundby contributes some interesting remarks on food and feeding. He calls attention to the misapprehension in regard to the difference between white and graham bread, and gives tables to demonstrate that chemically and in other ways they are practically alike. He discusses various forms of diet now in vogue with especial reference to the American no-breakfast plan.

3. Bashford presents a long article on the various cancer cures and others in England and America. [J. B. H.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 21.

MAY 25, 1911.

1. RIEDEL. *Bilateral Thrombosis of the Femoral Veins following Severe Catarrhal Colitis.*
2. BARTH. *Renal Tuberculosis.*
3. *MICHAELIS, L. *Acid Agglutination of Bacteria, especially the Typhoid Bacillus.*
4. KERN, H. *The Rebuilding of the Adrenals in Extrauterine Life.*
5. KLUG. *Physical Therapy in Certain Internal Disorders.*
6. TELEMANN, W. *Roentgen-ray Investigations on Stones in the Urinary Tract.*
7. STRUBELL. *Vaccine Therapy.*
8. *KERSTEN, P. *On the Diographic Study of the Size of the Heart in Tuberculosis.*
9. THAYER, H. *Salvarsan and Hemolysis.*
10. CANNATA, S. *Pathogenesis of Hemorrhagic Purpura.*
11. MELTZER, S. J. *Murmur at the Pylorus.*

3. Michaelis has brought out the fact that the agglutination of bacteria is somewhat dependent upon the reaction of the media or solution in which they are. He has found that the point of acidity favorable for agglutination differs with different kinds of bacteria, and that, therefore, this fact may be used as a diagnostic aid in differentiating the organism present. His observations so far have been chiefly on the typhoid bacillus.

8. Kersten has found that the heart is usually small in tuberculosis whether the disease is just beginning or is far advanced. He considers, therefore, that this condition is not the result of the general wasting of the body which accompanies the disease, but is a phenomena which accompanies this disease from the start and probably plays a part in the etiology, although it is not clear just what part it plays. [C. F., JR.]

DEUTSCHES ARCHIV FÜR KLINISCHE MEDIZIN. BD. 102.

HEFT. 5–6. MAY 10, 1911.

1. *PRIBRAM, H. *New Properties of Urine in Health and Sickness.*
2. *BIELING, R. *Diagnostic Importance of Urinary Pepsin in Gastric Cancer.*
3. OBERNDORFER. *Question of Localization of Arteriosclerotic Processes in the Peripheral Arteries.*
4. v. HOESSLIN, H., AND KASHIWADO, T. *Experimental Investigation of Sodium Chloride Metabolism and Renal Function.*
5. WEBER, F. P., AND DORNER, G. *A Case of Congenital Stenosis of the Pulmonary Artery with Special Regard to Secondary Blood Changes.*
6. WIESEL, R. *The Second Heart Sound.*
7. KNOLL, W. *Combination between Nucleus and Cytoplasm in Erythroblasts and their Relation to Hemoglobin.*
8. HASEBROEK, K. *Independence of the Peripheral Circulation and its Relation to the Central System.*
9. TACHAU, H. *A New Method for Determining the Sugar Content of the Blood.*
10. ADLER, O. *Poisoning with Rhodanommon.*
11. ROTH, O. *The Eosinophile Blood Picture According to Arneth.*
12. HEIBERG, K. A. *Diabetes and Cancer of the Pancreas.*

1. Pribram takes up the biological effect of urine by injection into animals. His results are more of theoretical interest than of practical value, but he seems to be opening up a new field which may eventually show practical results.

He notes in animals the effect upon the hemolysins, precipitins and complement-binding antibodies of the serum produced by the injection of urine. He finds that precipitation is much stronger in normal than albumen containing urine, while complement fixation is stronger in the albumen urine. Different parts of the urine obtained by different chemical procedures have the same effect in this regard and have been studied separately in regard to other properties. With the approach of uremia certain of these substances do not appear in the urine.

2. Bieling has found in studying the urine of patients for pepsin that the amount of this substance diminishes markedly in advanced cases of gastric cancer and not so much in other gastric conditions. He feels, however, that this sign does not appear at an early enough time for it to be of practical value from the standpoint of treatment. [C. F., JR.]

BERLINER KLINISCHE WOCHENSCHRIFT. No. 21.

MAY 22, 1911.

1. *KUTTNER, I. *The Indication for Surgical Treatment of Ulcers of the Stomach, and the After Results.*
2. *HESSE, A. *Does the Increasing Use of the Metal Salts in Radiology give us a False Picture of the Size and Shape of the Stomach?*
3. *SCHULTZ, W. A. *Further Contribution to the Question of Transfusion.*
4. *BUCHMANN. *Acute Poisoning with Benzol.*
5. KLEINHERT, D. *Family (Hereditary) Eosinophilia.*
6. UNGER, E., BETTMANN, M., AND RUBASDOW, S. *Double Intrathoracic Vagotomy.*
7. JACOBY, M., AND MEYER, N. *The Subcutaneous Injection of Tuberculin as a Means for the Diagnosis of the Tubercle Bacillus in Animal Experiments.*
8. WELTMANN, O. *Apparent Changes in the Growth Appearances in Different Strains of Cholera Bacilli.*
9. v. TOVOLGYI, E. *A Simple Method for the Introduction of the Ephraim Endo-bronchial Spray.*

2. The author, impressed by the differing opinions of various writers in regard to the x-ray in demonstrating the size and shape of the stomach, undertook a series of experiments in which he used a solution containing differing percentages of bismuth, took his pictures at varying intervals following its use, and had his patient both lying down and standing up.

His conclusions are as follows:

(1) The less bismuth a solution contains, the more sharply is the cardiac end of the stomach defined in relation to the proportion used. The more bismuth the solution contains, the more nearly does the stomach approach a bag shape.

(2) The influence of the bismuth on the shape of the stomach is dependent solely on its weight, not on its adherence to the walls of the stomach, or its chemical reaction.

(3) The more mondamin, or other starch-containing material, the solution contains, the greater its viscosity, and the cardiac end of the stomach remains fuller, giving a reed shape to the organ.

(4) The viscosity of the solution influences the shape of the stomach far more than does the percentage of bismuth in the solution. [J. B. S., JR.]

No. 22. MAY 29, 1911.

1. WESTPHAL, A. *A Death after Treatment of Spinal Disease with Salvarsan (Tabes and Syphilitic Spinal Meningitis) with Microscopical Examination of the Spinal Cord.*
2. TALMA, S. *Roentgen-ray Determination of the Position of the Stomach.*
3. WOLFF, W., AND JUNGHAUS, P. *The Quantitative Estimation of the Albumin Solvent in the Stomach Contents.*
4. *UNGER, E., BETTMANN, M., AND PINCUS, W. *Surgery of the Esophagus.*
5. *STRASSMAN, P. *The Alleviation of Pain in Childbirth.*
6. COON, F. *Metastatic Central Pneumonia following a Tonsillar Abscess.*
7. RITZ, H., AND SACHS, H. *Anaphylatoxin.*
8. BUROW, R. *Irrigal.*
9. MARX, H. *The Inferior Mental Standard in a Future German Penal Code.*

4. The authors report some experimental esophageal resections, followed by esophago-gastrostomies. Meltzer insufflation method of anesthesia was used. The technic of the operation is described in full. The results were said to be good.

5. The author makes some interesting philosophical remarks concerning the value of pain to the parturient woman, and to the child, and then goes on to say that the civilization of the present day has unfitted many of these women to undergo this pain. He reviews a number of the methods for producing anesthesia, and among them mentions spinal and sacral anesthesia, the use of which is reported by Stoechel, who used these two forms of anesthesia with excellent results in 141 cases.

He speaks very favorably of the scopolamine and morphine method, and reports favorable results of his own with its use. [J. B. S., JR.]

WIENER KLINISCHE WOCHENSCHRIFT. No. 20.

MAY 18, 1911.

1. SALZER, H. *Inflammation of the Cecum in the Child.*
2. JOANNOVICS, G. *Contribution to Intravascular Transplantation.*
3. KERMANNER, F. *Latent Pyelonephritis in the Female and its Diagnosis.*
4. LUCKSCH, F. *The Treatment of the Acute Infectious Diseases with Salvarsan.*
5. *LUITHLEN, F. *Animal Experiments on Skin Reaction.*
6. *HITSCHMANN, F., AND CRISTOFOLETTI, R. *The Pathology and Symptoms of Malignant Chorio-Epithelioma.* iii. (Conclusion.)
7. PFEIFFER, T. *The Necessity of a Military Hospital for Patients with Pulmonary Disease.*

5. The author reports three series of experiments on cats, from which he concludes that in spite of the difference between human and animal skin, one can attain results in experimental dermatology, since cutaneous reaction is dependent on the chemistry of the organism. Acidulation, as well as the addition of sodium oxalate, increases the reaction capacity of the skin, whereas increase of calcium diminishes the inflammatory exudative processes. Change in diet alters the susceptibility of the skin to external stimuli. The causes of all these phenomena might also depend on an increase of the excretion of alkalies; in diet also the varying addition of calcium might play a part. The cause of increased reaction lies in a change of the skin, which in chronic processes becomes permanent.

6. In their third and concluding paper, the authors sum up the results of their study as follows:

(*a*) Anatomic distinctions between benign and malignant forms of chorio-epithelioma are not recognized.

(*b*) Clinically also the distinction cannot be made with complete assurance.

(*c*) In differential diagnosis the clinical examination is of primary importance.

(*d*) From the anatomic structure of the tumor, the danger of its metastasis is very great.

(*e*) Treatment should be radical and should seek to avoid artificial metastasis.

(*f*) The indication for operation should be extended as far as possible. [R. M. G.]

No. 21. MAY 25, 1911.

1. SCHATTENFROH, A. *A Procedure for the Disinfection of Skins and Hides Infected with Anthrax.*
2. GHEDINI, G. *Experimental and Clinical Contribution to the Acetonitryl Reaction with Special Regard to the Differential Diagnosis in Basedow's Disease.* (First Communication.)
3. HRDLICZKA, V. *The Symptoms of Salvarsan Action.*
4. GÜNTHER, G. *Can One Ascribe a Pharmacologic Action to Stramonium Cigarettes?*
5. WIENER, E. *The Present Status of the Plague in India.*

## Obituaries.

### CHARLES GODDARD WELD, M.D. 1857–1911.

THE death of Dr. Weld is not only a deep personal sorrow to those of us who knew him intimately, but is a distinct loss to the community in which he lived. A lover and patron of art, a yachtsman who not only owned many boats, but knew how to sail them (as a man should who came from a family whose ships sailed the world over for many years with the flying horse at the topmast head), an enthusiastic and expert gunner and fisherman, a collector of things interesting and of educational value for the museums in which he was so deeply interested in Boston and Salem, a

helper to those who needed help whether strangers or friends, a thoughtful host, he will be missed by people in many professions and in all walks of life.

On the water, by the stream or in the field he was a charming companion whose first thought was always that the other fellow should have the best chance. During his trips to the woods he not only collected fish and game, but also the lame, the halt and the blind, and brought them back with him for medical advice and treatment.

There are many men in Boston who use the wealth at their command for the good of the community, but there are few whose benefactions covered a wider field or whose personal interest and care go with each gift as did his.

It was typical of him that in the last few hours of his life, when only the power of speech was left him, he spent those hours giving minute directions about the carrying on of certain works in which he had been interested and remembering his many friends.

Dr. Weld was born in Brookline, Mass., on Aug. 20, 1857. After leaving the Harvard Medical School in 1881, he was for a time in the Boston City Hospital and Chambers Street Hospital in New York. After this his active, personal medical work was given up on account of the larger financial responsibilities that he was obliged to assume, but he never lost his interest in things medical. Perhaps the Boston Dispensary was the institution to which he gave the most time and thought, though other medical charities were bountifully aided. One can speak only of those with which one is personally connected, for he was a man who never spoke of his gifts; but it is safe to say that there is hardly a medical charity in Boston that he has not aided, as well as many elsewhere. His interest in the Massachusetts General Hospital was always active, the Gay ward and the skin and throat ward, called much against his will the Weld ward, he built, and the surgical instruments were by him constantly replenished and kept up to the highest possible standard. Should new instruments, however expensive, be needed, the chairman of the instrument committee had only to order them, approve the bill and it was paid. The same was true of the x-ray outfit, which was largely his gift.

One day it was suggested that a wonderful collection of Peruvian skulls was in the country and for sale. He was told that the curator of the medical school wished to secure this, the most remarkable collection in the world, showing prehistoric trephining, and the next day they were the property of the school, the only condition of the gift being that no one should know who gave them.

One of the things that greatly interested him in the last year of his life was the building and equipping of a private hospital where, though not an active surgeon himself, he spent many hours of his time. The new Cancer Research Hospital was another institution in which he took a great interest. No deserving person ever needed medical aid that he was not ready to help to give him that aid, friend, acquaintance or stranger, it only mattered that they were in need.

His list was a long one and no one person knows all the items on it. No one knows, for instance, to how many men he has given an education at some college, the Institute of Technology or the Medical School, but they are not a few.

In his giving he was discriminating and careful as well as generous, and he was as willing to fight what he thought was wrong as to give to that which was deserving.

The medical profession of Boston has lost a true friend, a wise and able advisor and a generous benefactor.

## ALEXANDER BRUCE, M.A, M.D., LL.D., F.R.C.P.E.

Dr. Alexander Bruce, who died on June 4, at Edinburgh, was born in Ardiffery, Cruden, Aberdeenshire, Scotland, in 1854. He graduated from the University of Aberdeen in 1874 with highest classical honors, and began the study of medicine at the University of Edinburgh. He studied also at Vienna, Heidelberg, Frankfort and Paris; and returning to Edinburgh, became a Fellow of the Royal College of Physicians in 1879, subsequently receiving a gold medal for his thesis for the degree of M.D.

After serving for a time as assistant clinical clerk, at the West Riding Asylum in Yorkshire, England, he settled in the practice of medicine at Edinburgh, devoting himself especially to neurology, in which he acquired international eminence. He had served as lecturer on pathology at the Surgeons' Hall, as pathologist to the Royal Infirmary, to the Royal Hospital for Sick Children, and to the Longmore Hospital for Incurables; and at the time of his death held the appointment of physician and lecturer on clinical medicine in the Royal Infirmary. He had also been Morrison Lecturer on mental diseases at the Royal College of Physicians. He founded and edited the *Review of Neurology and Psychiatry* and is known as the author of several important works, notably "Illustrations of Mid- and Hind-Brain," and "The Topographical Atlas of the Spinal Cord," besides having been a frequent contributor to medical journals and to the *Transactions* of the Royal Society of Edinburgh, of which he was a member. He had also published a translation of Thoma's "Manual of Pathology," and at the time of his death had just completed a translation of Oppenheim's "Textbook of Nervous Diseases."

In 1898 Dr. Bruce was made a corresponding member of the Neurological Society of Paris. In 1908 he was awarded the Keith Prize for his paper entitled "Distribution of the Cells in the Intermediolateral Tract of the Spinal Cord." And in 1909, he received the honorary degree of LL.D. from the University of Aberdeen.

Dr. Bruce was an able and original thinker and a hard worker, and his death is a great loss to medical science. Of upright character and singu-

lar charm of manner, he was beloved by his patients and by all who knew him. He is survived by his widow, by two daughters and by three sons, one of the latter being also a physician.

JOHN QUINCY ADAMS McCOLLESTER, M.D.

DR. JOHN QUINCY ADAMS MCCOLLESTER, who died on June 23, at Waltham, Mass., was born in Marlboro, N. H., on May 3, 1831. After graduating from the University of Norwich, Vt., in 1853, he entered the Jefferson Medical College, Philadelphia, from which he received the degree of M.D. in 1856. He taught for a time in the Dartmouth Medical School, and then began the practise of his profession at South Deerfield, Mass., but subsequently removed to Groton Junction, now Ayer, Mass. In 1862 he was commissioned surgeon of the Fifty-Third Massachusetts Regiment, and served with that command throughout the remainder of the Civil War. He then settled in Groton, Mass., but later removed to Harvard, Mass., and in 1887 to Waltham. He had served for some years as medical examiner and secretary of the United States Civil War Veterans' Pension Board. He retired in 1903. He was a Fellow of The Massachusetts Medical Society, a member of the Boston Medical Library Association and of the Waltham Medical Club, a vice-president of the General Alumni Association of Jefferson Medical College, and a former president of the New England Association of Jefferson Medical College Alumni. He is survived by two daughters and two sons.

EDWIN PEABODY GERRY, M.D.

DR. EDWIN PEABODY GERRY, of Jamaica Plain, who died on June 21, at Phillipston, Mass., was born in Standish, Me., on Nov. 2, 1846. He fitted for college at the Boston Latin School, received the degree of A.B. from Dartmouth in 1869, and in 1874 that of M.D. from the Harvard Medical School. After serving as house-officer at the Boston City Hospital, he began the practise of medicine in Jamaica Plain. He took an active interest in local affairs, and had served in the Boston city government as alderman from his district. He was a Fellow of The Massachusetts Medical Society, a member and former president of the Norfolk District Medical Society, a former vice-president of the Boston City Hospital Alumni Association, a member of the West Roxbury Medical Club, of the Clinical Club and of the Harvard Medical Alumni Association. He is survived by his widow.

## Miscellany.

### HARVARD SUMMER SCHOOL OF MEDICINE SERIES OF LECTURES.

ON Friday, June 29, will be given the first of a series of general lectures announced by the Harvard Summer School of Medicine. This is the third season during which such a course has been offered. The lectures, which are open free to all members of the medical profession and of the Summer School of Medicine, will be held at 5 P.M., in Room 201 of the Administration Building of the Harvard Medical School. The complete schedule is as follows:

1. *Friday, June 30.* J. G. Mumford, M.D., Instructor in Surgery. Aspects of Abdominal Ptosis. (Illustrated by Lantern Slides.)

2. *Friday, July 7.* R. W. Lovett, M.D., Assistant Professor of Orthopedic Surgery. Surgical Aspects of Poliomyelitis.

3. *Tuesday, July 11.* H. A. Christian, M.D., Hersey Professor of the Theory and Practice of Physic. Uncinariasis.

4. *Friday, July 14.* P. C. Knapp, M.D., Clinical Instructor in Diseases of the Nervous System. Hemiplegia.

5. *Tuesday, July 18.* C. L. Scudder, M.D., Lecturer on Surgery. Stenosis of the Pylorus in Infancy. (Illustrated by Lantern Slides.)

6. *Friday, July 21.* E. C. Briggs, M.D., D.M.D., Professor of Dental Materia Medica and Therapeutics. Interstitial Gingivitis.

7. *Tuesday, July 25.* Hugh Cabot, M.D., Instructor in Genito-Urinary Surgery. Selected Topic in Renal Surgery.

8. *Friday, July 28.* C. M. Smith, M.D., Assistant in Syphilis. Modern Methods in the Treatment of Syphilis.

9. *Tuesday, August 1.* Oscar Richardson, M.D., Assistant Pathologist, Massachusetts General Hospital. Diseases of the Kidney, a Practical Classification from the Clinico-Pathological Standpoint.

10. *Friday, August 4.* J. L. Morse, M.D., Assistant Professor of Pediatrics. Medical Aspects of Poliomyelitis.

11. *Tuesday, August 8.* C. M. Green, M.D., Professor of Obstetrics. Cæsarean Section.

12. *Friday, August 11.* J. S. Stone, M.D., Assistant in Surgery. Certain Aspects of Surgery in Children.

13. *Tuesday, August 15.* E. A. Locke, M.D., Instructor in Clinical Medicine. Public Aspects of the Tuberculosis Problem.

14. *Friday, August 18.* W. J. Dodd, M.D., Instructor in the Use of the Roentgen Ray. Therapeutic Uses of the X-Ray.

15. *Tuesday, August 22.* E. P. Joslin, M.D., Instructor in the Theory and Practice of Physic. The Treatment of Diabetes Mellitus.

16. *Friday, August 25.* David Cheever, M.D., Demonstrator of Anatomy. The Lymphatic System and its Relation to Surgical Conditions.

17. *Tuesday, August 29.* G. B. Magrath, M.D., Instructor in Legal Medicine. The Massachusetts System of Medico-legal Inquiry.

### PREVALENCE AND PREVENTION OF RABIES IN THE UNITED STATES.

A BULLETIN (No. 449) has recently been issued by the United States Department of Agriculture relative to the increase of rabies in this country and informing farmers of the measures necessary for its control and eradication. This disease,

Welch Medical Lib. 15150



which has a mortality of 100% in untreated cases, is transmitted by the bite of various small animals, chiefly of the dog. The bulletin recommends the muzzling of all dogs as the surest and quickest means of preventing its spread. Since this measure has been adopted in European countries the disease there has practically disappeared.

In 1897 rabies was known to exist in only four of the United States. In 1908 it occurred in 18 out of the 20 states from which reports were received, and Dr. John R. Mohler, chief of the pathologic division of the bureau of animal industry and author of the bulletin, expresses his belief that it exists in every state except possibly Idaho, Utah, Nevada and Oregon. It is said to be most prevalent in Texas.

There are now in the United States 20 Pasteur Institutes for the treatment of rabies in man, and several hundred persons are treated by them annually, in 1908 nearly 1,500. The expense, suffering and apprehension involved might all be prevented and the disease eradicated by universal muzzling of dogs. "The islands of Australia, Tasmania, New Zealand, St. Helena, and the Azores have never become infected with rabies," and rigid quarantine measures are employed to keep the disease out. Effective sanitary regulation awaits only its opportunity to eliminate the infection from the United States, but this it cannot obtain without the development of a general demand for it by public opinion.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 17, 1911

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---|---|---|---|---|---|
| New York | 1,232 | 358 | Waltham | 7 | — |
| Chicago | 544 | 156 | Brookline | 3 | — |
| Philadelphia | — | — | Chicopee | 8 | 4 |
| St. Louis | — | — | Gloucester | 4 | — |
| Baltimore | — | — | Medford | 6 | — |
| Cleveland | — | — | North Adams | 3 | 2 |
| Buffalo | — | — | Northampton | 7 | 1 |
| Pittsburg | — | — | Beverly | 3 | 1 |
| Cincinnati | — | — | Revere | — | — |
| Milwaukee | — | — | Leominster | 2 | — |
| Washington | — | — | Attleboro | 2 | 2 |
| Providence | — | — | Westfield | 1 | 1 |
| Boston | 208 | 51 | Peabody | — | — |
| Worcester | 31 | 8 | Melrose | 3 | — |
| Fall River | 23 | 5 | Hyde Park | 2 | — |
| Lowell | 24 | 7 | Woburn | 1 | 0 |
| Cambridge | 23 | 6 | Newburyport | 5 | — |
| New Bedford | 29 | 8 | Gardner | 2 | 2 |
| Lynn | 23 | 8 | Marlboro | 1 | 0 |
| Springfield | 14 | 3 | Clinton | 3 | — |
| Lawrence | 29 | 11 | Milford | — | — |
| Somerville | — | — | Adams | 2 | 2 |
| Holyoke | 14 | 8 | Framingham | — | — |
| Brockton | 6 | 0 | Weymouth | — | — |
| Malden | 10 | 1 | Watertown | 1 | 0 |
| Haverhill | 8 | 1 | Southbridge | 1 | 1 |
| Salem | 7 | 1 | Plymouth | — | — |
| Newton | 3 | — | Webster | 0 | — |
| Fitchburg | 6 | 3 | Methuen | 2 | — |
| Taunton | 8 | 3 | Wakefield | — | — |
| Everett | 5 | 1 | Arlington | 3 | — |
| Quincy | — | — | Greenfield | 1 | 1 |
| Chelsea | 8 | 3 | Winthrop | — | — |
| Pittsfield | 9 | 1 | | | |

## APPOINTMENTS.

THE BOARD of Scientific Directors of the Rockefeller Institute for Medical Research announce the following appointments to the staff of the Institute: Alfred F. Cohn, M.D., Associate in Medicine; Arthur W. M. Ellis, N.B., Assistant Resident Physician; Alphonso R. Dochez, M.D., Assistant Resident Physician; Frank V. Bancroft, Ph.D., Associate in Experimental Biology; Reinhard H. Beutner, Eng. D., Assistant in Experimental Biology; James B. Murphy, M.D., Assistant in Pathology; J. J. Bronfenbrenner, Fellow in Pathology; Frederick B. La Forge, Ph.D., Assistant in Chemistry; Henry K. Marks, M.D., Assistant in Pathology; Helen L. Fales, Research Scholar in Chemistry; Angelia M. Courtney, Assistant in Chemistry.

## RECENT DEATHS.

DR. JOHN FRANKLIN WHITMYER, chief medical inspector in the New York City Health Department, died from cardiac disease on June 23, at the age of forty-seven years. He was born in Schenectady, N. Y., and was graduated from the College of Physicians and Surgeons, New York, in 1890. He had been in the service of the Health Department nearly twenty years, and four years ago he succeeded Dr. Alonzo Blauvelt, resigned, as chief inspector of contagious diseases.

DR. CARL H. LELLMANN, a prominent German physician of New York, died on June 21 in Karlsruhe, Germany, at an advanced age. He was graduated from the University of Göttingen in 1854. Dr. Lellmann retired from practice a year or two ago, and at that time he was consulting physician to the German and St. Francis Hospitals.

DR. WILLIAM HENRY MORSE, JR., an instructor in the New York College of Dentistry, died on June 17, from Bright's disease. He was a son of Dr. William H. Morse of New York, and was twenty-nine years of age.

DR. WILLIAM P. BRIERLY, of Albany, N. Y., was instantly killed on June 22, while attempting to board a trolley car. He was a graduate of the Albany Medical College in 1886.

DR. DANIEL B. NUGENT, of Henderson, N. Y., the oldest physician in Jefferson County, died on June 20, from injuries received by being struck by a bicycle. He was ninety-two years of age.

DR. JOHN JEREMIAH VAN RENSSELAER, a retired physician of Swartswood, Essex County, N. J., died on June 18, at the age of seventy-five years.

DR. GEORGE WASHINGTON BAILEY, who died on June 21, at Elizabeth, N. J., was born in Gloucester County, N. J., on Dec. 5, 1840. At the outbreak of the Civil War, he enlisted in the Twenty-Fourth New Jersey Volunteer Regiment, and served in the ranks of that command throughout the war. In 1868 he obtained the degree of M.D. from the University of Pennsylvania, and for a few years practised his profession, but retired on account of ill-health in 1872, and since that time had been largely concerned in the real estate and coal business. He was a trustee of the Presbyterian Hospital of Philadelphia, and was interested in numerous other charitable, benevolent, and philanthropic institutions and enterprises.

DR. ISAAC W. BLACKBURN, chief pathologist at the Government Hospital for the Insane, at Washington, D. C., died of chronic entero-colitis in that city last week, at the age of fifty-nine years. He had formerly been professor of pathology at George Washington and Georgetown Medical Schools. He is survived by his widow.

DR. MONDANA FULLER DE HART, who died last week at Freedom, N. J., was a native of New England. She received her professional degree from the Woman's Medical College in New York. She settled in 1865 at Jersey City, N. J., and was the first woman to practise medicine there. She retired two years ago. She is survived by her husband, by three daughters, and by one son. Two of her daughters were physicians.

EDWIN PEABODY GERRY, M.D., M.M.S.S., died at Phillipston, Mass., on June 22, 1911, aged sixty-four years.

JOHN QUINCY ADAMS MCCOLLESTER, M.D., M.M.S.S., died at Waltham, Mass., on June 23, 1911, aged eighty years.

## BOOKS AND PAMPHLETS RECEIVED.

Spirochaetes. By W. Cecil Bosanquet, M.A., M.D. W. B. Saunders Co.

Structure and Functions of the Body. By Annette Fiske, A.M. W. B. Saunders Co.

Golden Rules of Pediatrics. By John Zahorsky. C. V. Mosby, St. Louis, Mo.

Education. How Old and New. By James J. Walsh, M.D., Ph.D. Fordham University Press. 1910.

Survival of Engrafted Tissues. III. Blood Vessels. By C. C. Guthrie. Reprint.